LOUISIANA DEPARTMENT OF WILDLIFE & FISHERIES

OFFICE OF FISHERIES
INLAND FISHERIES SECTION

PART VI –C (ARCHIVES)

WATERBODY MANAGEMENT PLAN SERIES

LAKE BISTINEAU

AQUATIC VEGETATION TYPE MAPS
AND NARRATIVES - 2016

APPENDIX I
Act No. 43 1930

ACT NO. 43.

House Bill No. 535. By. Messrs. Wimberly, Hughes and Bacon.

AN ACT

To establish the Lake Bistineau State Game and Fish Preserve out of Dorcheat Bayou and Lake Bistineau in the Parishes of Bienville, Bossier, and Webster; to provide for the erection and maintenance of same under the control of the Department of Conservation; to provide for a Commission to administer and govern the same; to provide for a domicile therefor; to provide for the purchase or expropriation of all property necessary therefor; to provide for the sale or donation of state, school, levee board, or other public lands to said preserve, located within its boundaries and necessary to its maintenance and erection; to provide for the appropriation of money by the Parishes of Bienville, Bossier, and Webster for the benefit of said game and fish preserve; to provide for the voting of special taxes and issuing bonds for the purpose of erecting and maintaining said fish preserve by the Parishes of Bienville, Bossier, and Webster; to provide the issuance of certificates of indebtedness, secured by the revenues of the Commission; to provide for the erection and maintenance of dams, levees, dykes, canals, and drains; defining the power and authority of the Commission hereby created; providing for the expropriation of surface rights of privately owned property; providing that the mineral rights now held by private individuals may be retained; providing that the right of the State to lease lands within said

game and fish preserve for mineral purposes shall not be abridged; providing for the employment of special officers to police said game and fish preserve; giving the governing body of said fish preserve the right to charge a fee for the privilege of fishing or hunting on said preserve; providing for the erection and maintenance of fish hatcheries in or near said preserve; providing for closed seasons for hunting or fishing thereon; providing that rules and regulations made by the Game & Fish Commission shall be promulgated as ordinances by the Police Juries of the Parishes of Bienville, Bossier, and Webster, and that the violation of any of said rules and regulations thus promulgated shall be a misdemeanor and punishable by fine or imprisonment, or both; providing that said Game and Fish Commission shall have control of all of Dorcheat Bayou and over tributary streams for three (3) miles from the boundaries of said game and fish preserve; providing for the expropriation of money out of funds of the Department of Conservation to assist in the erection and maintenance of said game and fish preserve.

Providing for establishment of Lake Bistineau State Game and Fish Preserve created.

Section 1: Be it enacted by the Legislature of Louisiana, That the Lake Bistineau State Game & Fish Preserve is hereby created out of Dorcheat Bayou and Lake Bistineau situated in the Parishes of Bienville, Bossier, and Webster, South of Dixie-Overland Highway between Shreveport and Minden in Webster Parish, and extending South in Township Fifteen (15) and into Bossier and Bienville Parishes, and the territory comprising the preserve shall be all that land along Dorcheat Bayou and Lake Bistineau below mean high water mark as shown by the meandering lines as now of record, until new lines and boundary be defined by surveys made under supervision of the Department of Conservation, and the Commission in charge of this Lake Bistineau State Game & Fish Preserve shall have authority and control extending one-half (1/2) mile beyond such boundary lines now established, or that may be established.

Lake Bistineau State Game and Fish Commission created.

Section 2: That there is hereby created the Lake Bistineau State Game & Fish Commission to be composed of three members, one to be elected by each of the Police Juries of the Parishes of Bienville, Bossier, and Webster, and to serve each for the term of four (4) years, after the first term, and the first term of the member from Bienville shall expire July 1st, 1934, and the first term of the member from Bossier shall expire July 1st, 1935, and the first term of the member from Webster shall expire July 1st, 1936.

Powers and authority.

Section 3: That said Game & Fish Commission, under the control of the Department of Conservation, shall have

the right to administer said Game & Fish Preserve and to make rules and regulations for the control thereof. That said Commission shall have the power and authority, under the control of and supervision of the Department of Conservation, to regulate and control the taking of Game or Fish from the preserve, to establish closed seasons, to fix game and fish limits, to employ wardens, to build roads, to provide camps and boats, to fix fees for hunting or fishing in said preserve, in addition to fees for state licenses, to make rules and regulations and enforce the same, to buy, lease, or sell property necessary to the establishment and maintenance, or improvement of said preserve, to lease or let the privilege of commercial fishing in said preserve, to employ all labor necessary, to establish fish hatcheries, and to do any and all things necessary to the propagation and conservation of game and fish in the preserve.

Authority of Commissioner of Dept. of Conservation to appoint members of Commission.

Section 4: The members of the said Commission shall be duly qualified electors within and for the parish from which they are elected, and the election of each of said Commission shall be approved by the Commissioner of the Department of Conservation, and in the event of his failure to approve the election of any member, the Police Jury of the particular parish shall elect some other qualified person, and if any one of the Police Juries neglects, for ninety (90) days, to elect their Commissioner, then the Commissioner of the Department of Conservation may appoint said Commissioner.

Domicile of Commission.

Section 5: That Minden, Webster Parish, shall be the domicile of the Game & Fish Commission herein created, and the said Commission shall meet and organize and elect its officers which shall consist of a Chairman, Vice-Chairman and Secretary and Treasurer, and said Commission shall have the right, power and authority to sue and be sued. It may purchase, lease or expropriate all property necessary to the erection and maintenance of said Game & Fish Preserve; expropriation proceedings instituted by said Commission shall be conducted under and according to the general laws now in force for the expropriation of property for public purposes.

Right to acquire lands.

Section 6: All school boards, levee boards and all parochial and municipal governing authorities shall have the right, power and authority to sell or donate to the said Game & Fish Commission any lands lying within or adjoining the boundaries of said Game & Fish Preserve, but said property thereafter shall become the property of the State of Louisiana for the use and benefit of the said Game & Fish Preserve. Said School boards, levee boards, parochial and municipal governing authorities may sell or donate the surface of said lands and retain, at the same time, the own-

ership of the minerals with the right to grant leases for the production of oil, gas or other minerals.

Right to expropriate.

Section 7: The said Game & Fish Commission shall have the power and authority to expropriate any land, including minerals, belonging to private individuals necessary to the erection and maintenance of the said Game & Fish Preserve. It may, if advisable, expropriate only the surface of the property, leaving the ownership of any minerals in said private land owners, and leaving to said private land owners the right to grant leases for the production of oil, gas, or other minerals, from lands thus expropriated.

Section 8: That all lands belonging to the State of Louisiana necessary to the erection and maintenance of said Game & Fish Preserve are hereby granted to the said Game & Fish Commission for the purposes herein set out, but this grant shall in no wise abridge the right of the state to lease said lands for the production of oil, gas, or other minerals under the general laws, of the state as now provided.

Appropriations parishes.

Section 9: That the Police Juries of the Parishes of Bienville, Bossier, and Webster may appropriate money out of the general funds of said parishes for the purpose of erecting and maintaining said Game & Fish Preserve, and the people of said parishes may, after an election duly called for that purpose under the Constitution and Laws of the State of Louisiana, vote special taxes and issue bonds in order to raise money for the erection and maintenance of said Game & Fish Preserve, which is hereby declared to be a public purpose and benefit.

Special election special taxes and suance of bonds.

Right to antic revenues and certificates of in edness

Section 10: The said Game & Fish Commission hereby created shall have the right, power, and authority to anticipate any revenues derived by it from any source, and to issue certificates of indebtedness pledging said revenues for the payment of same. Said certificates of indebtedness shall not run longer than five (5) years.

Rules and re tions to be app by Department Conservation an be published.

Section 11: That all rules and regulations made and established by the Commission herein created for the government, control and regulation of said Game & Fish Preserve, shall be approved by the Department of Conservation and shall be promulgated in the form of an ordinance of each of the Police Juries of the Parishes of Bienville, Bossier, and Webster, and published for thirty (30) days in a newspaper published in each of the said Parishes of Bienville, Bossier, and Webster, and the violation of any of the said rules and regulations made and published by said Police Juries shall be a misdemeanor and shall be punished by a fine, not exceeding five hundred ($500.00) Dollars, or by imprisonment, not exceeding three (3) months, or both, at the discretion of the court. If the act of any one of the Police Juries is irregular and not legal, or if said Police

Penalty.

Jury fail to promulgate said rules and regulations, this shall not invalidate or impair the legality of the acts of the other Police Juries.

Dams, dikes, levees, etc.

Section 12: That the said Game & Fish Commission shall have the power and authority to erect dams, dykes, and levees, dig all ditches, canals, or drains, and acquire all land by purchase, lease or donation necessary to the erection and maintenance of said Game & Fish Preserve.

Control of streams.

Section 13: That the said Game & Fish Commission shall have supervisory control over all streams tributary to said Game & Fish Preserve and shall have the power to make rules and regulations for the taking of fish from such tributary streams within three (3) miles of the boundaries of said Game & Fish Preserve, and over Dorcheat Bayou in the State of Louisiana.

Appropriation of $35,000.

Section 14: That there is hereby appropriated out of the conservation funds, the sum of Thirty-Five Thousand ($35,000.00) Dollars not otherwise appropriated by the Department of Conservation to be used for the purpose of erecting and maintaining said Game & Fish Preserve. That this said amount shall be expended under the control and direction of the said Game & Fish Commission with the approval of the Commissioner of the Department of Conservation.

Constitutionality.

Section 15: That if any section of this Act be held unconstitutional, such decision shall not invalidate or affect other sections of the Act; and all laws and parts of laws in conflict with the provisions of this Act are hereby repealed.

Limitation.

Section 16: The Board of Liquidation of the State Debt is prohibited from borrowing any money for the purpose of carrying out the provisions of this Act, and this appropriation shall only be paid out of funds not otherwise appropriated.

Approved by the Governor: July 11, 1930.

A true copy:
JAMES J. BAILEY,
Secretary of State.

APPENDIX II

Act No. 64 1942

ACT No. 64.

House Bill No. 388. By Mr. E. C. Parker.

AN ACT

To amend and re-enact Sections 3 and 11 of Act 43 of 1930, entitled: "An Act to establish the Lake Bistineau State Game and Fish Preserve out of Dorcheat Bayou and Lake Bistineau in the Parishes of Bienville, Bossier and Webster; to provide for the erection and maintenance of same under the control of the Department of Conservation; to provide for a Commission to administer and govern the same; to provide for a domicile therefor; to provide for the purchase or expropriation

of all property necessary therefor; to provide for the sale or donation of state, school, levee board, or other public lands to said preserve, located within its boundaries and necessary to its maintenance and erection; to provide for the appropriation of money by the Parishes of Bienville, Bossier, and Webster for the benefit of said game and fish preserve; to provide for the voting of special taxes and issuing bonds for the purpose of erecting and maintaining said fish preserve by the Parishes of Bienville, Bossier, and Webster; to provide the issuance of certificates of indebtedness secured by the revenues of the Commission; to provide for the erection and maintenance of dams, levees, dykes, canals and drains; defining the power and authority of the Commission hereby created; providing for the expropriation of surface rights of privately owned property; providing that the mineral rights now held by private individuals may be retained; providing that the right of the State to lease lands within said game and fish preserve for mineral purposes shall not be abridged; providing for the employment of special officers to police said game and fish preserve; giving the governing body of said fish preserve the right to charge a fee for the privilege of fishing or hunting on said preserve; providing for the erection and maintenance of fish hatcheries in or near said preserve; providing for closed seasons for hunting or fishing thereon; providing that rules and regulations made by the Game and Fish Commission shall be promulgated as ordinances by the Police Juries of the Parishes of Bienville, Bossier, and Webster, and that the violation of any of said rules and regulations thus promulgated shall be a misdemeanor and punishable by fine or imprisonment, or both; providing that said Game and Fish Commission shall have control of all of Dorcheat Bayou and over tributary streams for three (3) miles from the boundaries of said game and fish preserve; providing for the expropriation of money out of funds of the Department of Conservation to assist in the erection and maintenance of said game and fish preserve.

Section 1. Be it enacted by the Legislature of Louisiana, That Sections 3 and 11 of Act 43 of 1930 be and the same are hereby amended and re-enacted so as to read as follows:

Section 3. Said game and fish commission under the supervisory control of the Department of Conservation shall have the full right to administer, regulate, and control said game and fish preserve and a hunting and fishing area except as to the minerals and mineral rights

Powe
thority.

as hereinafter set forth; and it shall make rules and regulations for the control thereof. That said Commission shall have the power and authority, under the supervisory control of the Department of Conservation, to regulate and control the taking of Game or Fish from the preserve, to establish closed seasons, to fix game and fish limits, to employ wardens, to build roads, to provide camps and boats, to fix fees for hunting or fishing in said preserve, in addition to fees for state licenses, to make rules and regulations and enforce the same, to buy, lease, or sell property necessary to the establishment and maintenance, or improvement of said preserve, and to lease or let the privilege of commercial fishing in said preserve, to employ all labor necessary, to establish fish hatcheries, and to do any and all things necessary to the propagation and conservation of game and fish in the preserve.

Right to apply for restraining orders.

The said commission is hereby granted the right to apply for and obtain restraining orders and writs of injunction, without payment of costs, against any and all parties deemed by them to be trespassing on said preserve in all cases of failure to comply with the rules and regulations adopted by it or to pay such license fees as fixed by it.

Rules and Regulations to be approved by Department of Conservation and to be published.

Section 2. That all rules and regulations made and established by the Commission herein created, for the government, control and regulation of said Game and Fish Preserve, shall be approved by the Department of Conservation and shall be promulgated in the form of an ordinance of each of the Police Juries of the Parishes of Bienville, Bossier, and Webster, and published for thirty (30) days in a newspaper published in each of the said Parishes of Bienville, Bossier, and Webster, and the violation of any of the said rules and regulations made and published by said Police Juries shall be a misdemeanor and shall be punished by a fine, not to exceed Five Hundred ($500.00) Dollars, or by imprisonment, not to exceed (3) months, or both, at the discretion of the Court. If the act of any one of the Police Juries is irregular and not legal, or if said Police Jury fails to promulgate said rules and regulations, this shall not invalidate or impair the legality of the acts of the other Police Juries. Provided that in fixing such rules and regulations, the following regulations and laws shall govern the use of said preserve until such time as same are legally changed by the Commission:

Penalty.

Rules and Regulations governing preserve.

1. The disturbing of the waters of the game and fish preserve of Lake Bistineau, Dorcheat Bayou, and their tributaries by the beating of the waters with sticks, clubs,

water hose, inner tubes, by racing motors in circles and courses, by the shooting of fire crackers, by the exploding of powder and dynamite or by any other means or instruments, is prohibited;

2. Commercial Fishing at night by any means is prohibited;

3. Commercial fishing is allowed during and between one hour after sun up and one hour before sun down, and all nets must be within the legal size; the mesh of the nets must come within the legal limits fixed by law; setting the nets within 300 feet of each other is prohibited. Algar must be destroyed and disposed of in a sanitary manner;

4. The catching and keeping game fish in nets is prohibited;

5. Operators of motor boats are required to reduce speed and exercise caution when meeting other boats or passing boats and shall pass on the right side;

6. The limit per person of the catch of fish shall be the same as and governed by the general state law on this subject.

7. It shall be unlawful for any person to have in his possession, either on or about his person, or in a boat, a pistol or rifle, while on the waters of said Lake Bistineau, Louisiana;

8. It shall be unlawful for any person to discharge a rifle or pistol on, over, under, across or partly across any of the waters of Lake Bistineau; provided that the above two sections shall not apply to having in possession or discharging a shotgun on Lake Bistineau;

9. Pollution of said Lake and its tributaries is hereby prohibited;

10. No duck blind may be built, maintained or located within 225 yards of another duck blind already erected on the open lake; any old duck blinds already erected in the wooded area must be constructed or maintained not less than 225 yards apart; no blinds may be built with larger than 8′x8′ floor space, persons using duck blinds, excepting owners, are required to have written consent of the owner; hunters in boats are prohibited from shooting while the boat is in motion and in no case closer than 300 yards of duck blinds; the location of each duck blind must be designated at the time application for the use or building of such duck blind is made.

11. No person will be allowed to construct or maintain a duck blind unless such person has first paid an annual license fee of $2.00 per annum to the commission prior to use of same for such year as prescribed by the Commission.

12. No building to be used as living quarters shall be allowed on the preserve and no obstructions of any kind shall be built thereon unless same are in keeping with the purposes of the preserve.

Penalty for violation.

The violation of any of the foregoing rules or regulations fixed under Paragraphs 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11 and 12, shall constitute a separate misdemeanor and shall be punishable by fine not to exceed $500.00, or by imprisonment not to exceed three months or both at the discretion of the court.

Jurisdiction.

The District Courts in or of Bossier, Bienville or Webster Parishes, bordering on said preserve, are hereby given jurisdiction for the prosecution, trial and conviction for any violations of the above named misdemeanors.

Approved by the Governor: July 7, 1942.

A true copy:

JAS. A. GREMILLION,
Secretary of State.

APPENDIX III
Act No. 152 1969

ACT No. 152

House Bill No. 218. By: Messrs. Bigby, Stinson, Branton and Garrett and Senator Montgomery.

Act 152

AN ACT

To abolish the Lake Bisteneau State Fish and Game Commission and to transfer the functions, property, building, equipment and all of the appurtenances appertaining thereto of the said Lake Bisteneau State Fish and Game Commission and the Administration thereof to the Louisiana Wildlife and Fisheries Commission; to give the Louisiana Wildlife and Fisheries Commission all authority necessary to effectuate such transfer; and to otherwise provide in connection therewith.

Be it enacted by the Legislature of Louisiana:

Section 1. The Lake Bisteneau State Fish and Game Commission is hereby abolished.

Section 2. The functions, property, buildings, equipment, books, records, and all of the appurtenances appertaining thereto of the Lake Bisteneau State Fish and Game Commission and the administration thereof is hereby transferred to the Louisiana Wildlife and Fisheries Commission and the Louisiana Wildlife and Fisheries Commission is hereby granted all authority necessary to effectuate such transfer.

Section 3. Upon the said transfer of functions of the Lake Bisteneau State Fish and Game Commission to the Louisiana Wildlife and Fisheries Commission any pending or unfinished business thereof shall be taken over and completed by the said Louisiana Wildlife and Fisheries Commission, with the same power and authority as the Lake Bisteneau State Fish and Game Commission.

Section 4. The Louisiana Wildlife and Fisheries Commission shall be the successor in every way to the Lake Bisteneau State Fish and Game Commission, and every act done in the exercise of such functions by the Louisiana Wildlife and Fisheries Commission shall be deemed to have the same force and effect under any provisions of law in effect as if done by the Lake Bisteneau State Fish and Game Commission.

Whenever the Lake Bisteneau State Fish and Game Commission is referred to, or designated by any law or contract or other document, such reference or designation shall be deemed to apply to the Louisiana Wildlife and Fisheries Commission; provided that to the extent necessary to prevent the impairment of the contractual obligations of any agency heretofore existing, or of the state of Louisiana, the existence, organization, and functions of any such agency shall be excluded from the provisions of this Section, and like exclusion shall be made whenever necessary to prevent any violation of the provisions, terms, or conditions of any gift, donation, deed, will, trust, or other instrument or disposition by which property of any nature or description has been vested in

any agency affected by this Section, or the diversion from the purposes for which such property was donated, deeded, divided or bequested, or otherwise vested in any such agency; provided, further, that the provisions of this Section shall not be construed or applied in such a way as to prevent full compliance by the state or any agency thereof with the requirements of any Act of the Congress of the United States or any regulations made thereunder by any officer or agency of the Federal Government, by which Federal aid or other financial assistance from the United States has been made available to this state or any subdivision or agency thereof, anything contained in this Section to the contrary notwithstanding.

Section 5. All books, papers, records, money, choses in action, and other property heretofore used or possesed by any agency in the exercise of functions hereby transferred, shall be transferred to the Louisiana Wildlife and Fisheries Commission.

Section 6. If any provision or item of this Act or the application thereof is held invalid, such invalidity shall not affect other provisions, items or applications, of this Act which can be given effect without the invalid provisions, items or applications, and to this end the provisions of this Act are hereby declared severable.

Section 7. All laws or parts of laws in conflict herewith are hereby repealed.

Approved by the Governor: June 20, 1969.

A true copy:

WADE O. MARTIN, JR.
Secretary of State.

APPENDIX IV
Transfer to LDWF

RS 36:610

§610. Transfer of agencies to Department of Wildlife and Fisheries

D. The following agencies, as defined in R.S. 36:3, are hereby placed within the Department of Wildlife and Fisheries and shall exercise and perform their powers, duties, functions, and responsibilities as provided for agencies transferred in accordance with the provisions of Part II of Chapter 22 of this Title:

Lake Bistineau State Game and Fish Preserve (Acts 1930, No. 43, as amended)

RS 56:801

PART II. PARTICULAR STATE GAME AND FISH PRESERVES AND SANCTUARIES

§801. Particular game and fish preserves and commissions recognized and continued

The following preserves and commissions created by the enumerated special statutes are continued in full force and effect within the Department of Wildlife and Fisheries:

(1) Repealed by Acts 1981, No. 422, §2; Acts 1981, No. 490, §1; Acts 1981, No. 858, §5, eff. Jan. 1, 1982.

Lake Bistineau State Game and Fish Preserve (Acts 1930, No. 43; Acts 1942, No. 64; Acts 1969, No. 152; Acts 1977, No. 222, §1). Acts 1995, No. 1262, §1; Acts 1997, No. 21, §2.

[1]SEE ACTS 1990, NO. 539, §1.

RS 56:802

§802. Responsibilities and duties

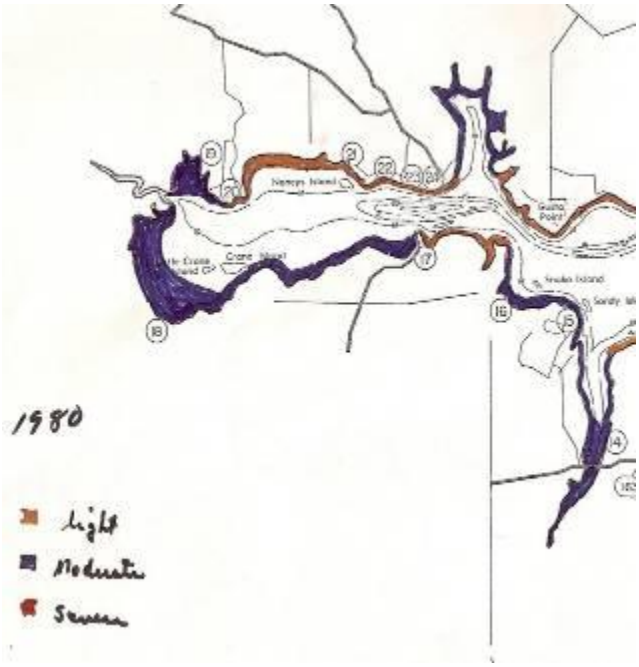
The department shall have the duty and responsibility for the management of resources, including water level control, aquatic weed control, and maintenance and repair of dams, control structures, and spillways within the territorial jurisdiction of each commission established in R.S. 56:801, provided that no local commission or authority is providing these services. The individual game and fish preserves and commissions or local governing authorities shall have the duty and responsibility for maintaining all support services within their territorial jurisdiction, including parks, picnic areas, and concessions.

Added by Acts 1982, No. 728, §1.

APPENDIX V

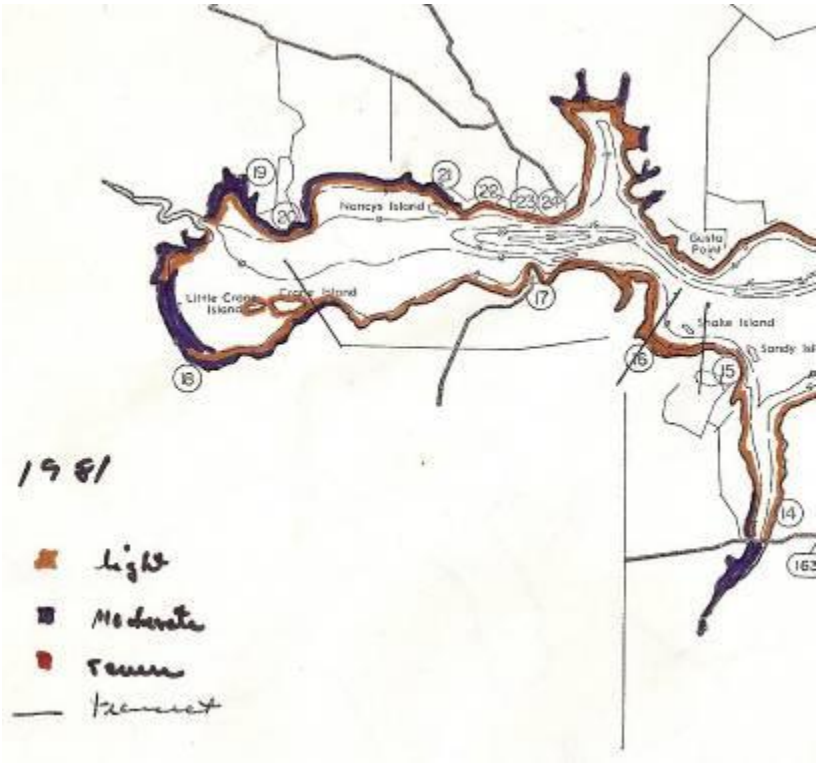
Lake Bistineau Typemaps

1980 Type Map – North Section



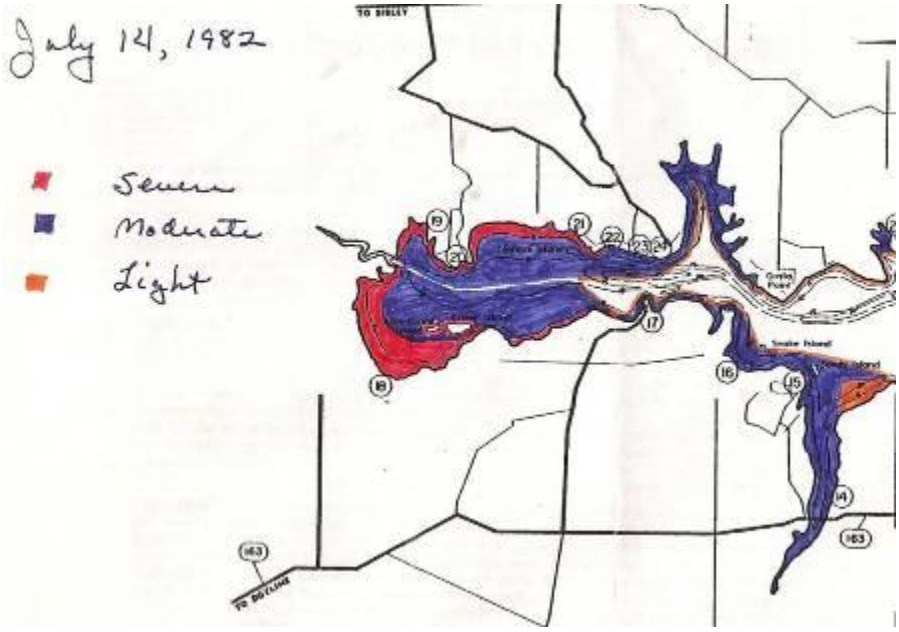
1980 Type Map – South Section

1981 Type Map – North Section

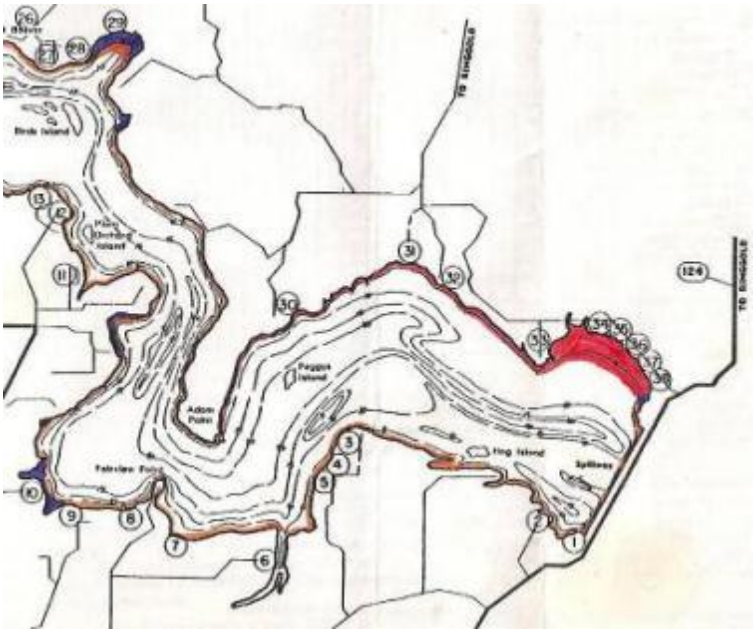


1981 Type Map – South Section

1982 Type Map – North Section



1982 Type Map – South Section



1983 Type Map – Narrative

LAKE BISTINEAU
July 1983

At the time of assessment Lake Bistineau was at pool stage. The condition of the water ranged from clear in most areas to murky in areas where sewage is getting into the lake.

The submersed plants noted are filamentous algae, Potomogeton, Utricularia Ceratophyllum, Cabomba, Myriophyllum.

The marginal plants noted are Cephalanthus, Ludwigia, Polygonum, Scripus, Cyperus, Pontederia and Sagittaria.

The floating plants noted were Eichornia and Spirodela.

Since the survey in 1982 the water hyacinth have doubled in areas and density. Many areas of the lower half of the lake are having problems that they didn't have in 1982. Much of Lake Bistineau is unuseable because of the water hyacinths.

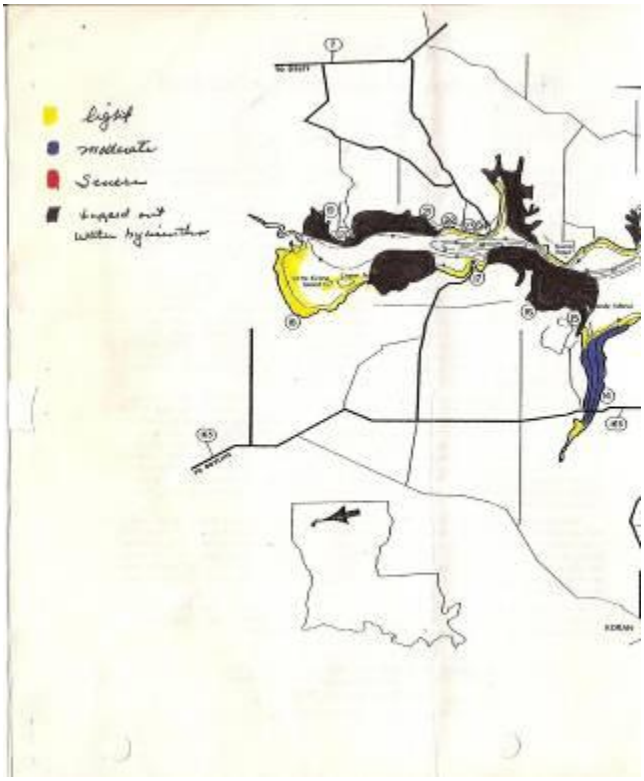
The submersed plants were found in light infestations in the upper end and mid-portion with some areas of moderate to severe infestation in the lower east bank area.

In summary Lake Bistineau has a very severe water hyacinth problem concentrated in the upper two thirds of the lake. Duckweed is not present like it was in 1982.

Submersed plants have not increased as anticipated. There has been a decrease in the amount of submersed plants in some areas of the lake. The cause for the decrease in submersed plants would be hard to determine and would only be theory.

At this time, a water fluctuation program might cause more problems than it will do good. A drawdown would probably cause an increase in submersed plants in the lower end and if the right weather conditions didn't prevail the water hyacinth problem would probably be aggravated lake wide. It would be a gamble to actually say at this time that water fluctuation would help the problems on Bistineau.

1983 Type Map – North Section



1983 Type Map – South Section

1984 Type Map - Narrative

Lake Bistineau
1984:

At time of assessment Lake Bistineau was at pool stage. The water had a generally good color with a fair amount of plankton present. The water in the extreme upper end was turbid compared to the water a half mile below.

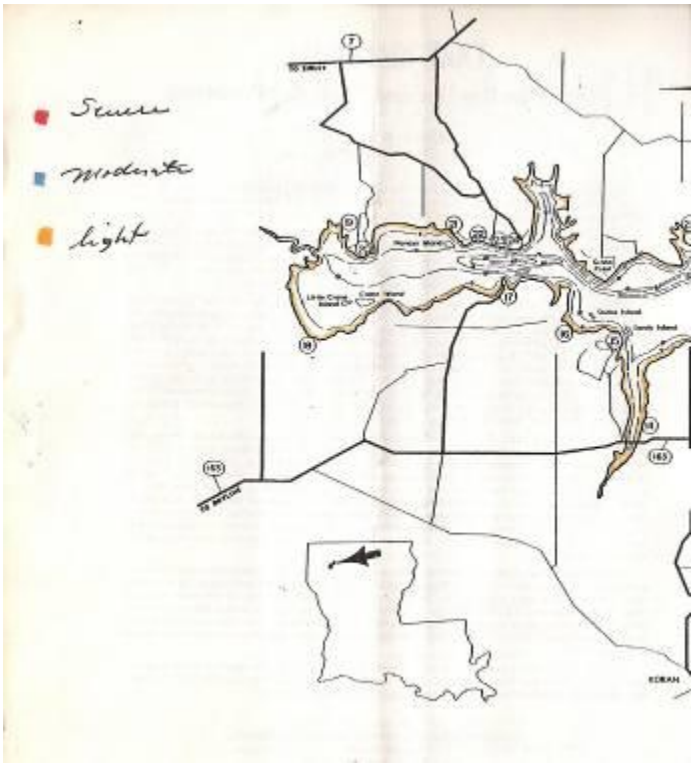
The infestatios of submersed aquatic plants as noted on the type map was for the most part light with the exception of one area that was moderate. The light infestations noted on the type map cons is ted of Utri cul aria and Cerataphyll urn often-: ::.:: mixed with Chara. The moderate infestations noted on the type map consisted of primarily Utricularia, filamentous algae, chara, and in some areas Milfoil.

The marginal plants noted were Ludwigfa, young Eichornia, Alterantnera, Cephalantus, and miscellaneous grasses.

In summary Lake Bistineau is in very good condition. The submersed plants are light in infestation and causing no problem. Tile marginal and floating plants are in tolerable amounts and under control.

Melvin Bagwell

1984 Type Map – North Section



1984 Type Map – South Section


1984
LAKE BISTINEAU
0
1.0
2.0
SCALE IN MILES
POOL STAGE 141.0'
CONTOUR INTERVAL 5.0'
DATE: 1971

1988 Type Map - Narrative

LAKE BISTINEAU

1988

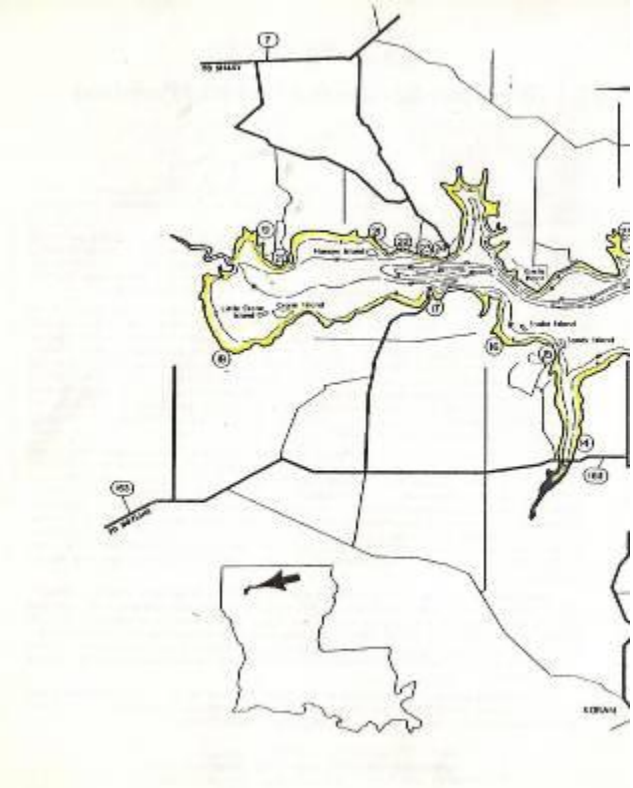
At the time of assessment Lake Bistineau was ten inches below ten inches below pool stage. The water color was good. Plankton bloom was noted in almost all areas. The area around small Island had less plankton bloom than other areas for some unexplainable reason.

The submersed aquatic plants noted were Cabomba, Utricularia, Ceratophyllum, Myriophyllum, ehara, Eleocharis, and Southern naiad.

The emersed plants noted were primrose white waterlily and American Lotus.

In summary Lake Bistineau is in good condition. There has been an increase in Milfoil in the area on the east side alone the dam. In other areas there has been no significant increase this last growing season. Few water hyacinths were noted, most had been sprayed. Some areas have a fair amount of filamentous algae in mats. One algae area is the east side above the dam and also the area around Camp Joy.

1988 Type Map – North Section



1988 Type Map – South Section

1989 Type Map - Narrative

LAKE BISTINEAU 1989

Lake Bistineau, Webster, Bienville, and Claiborne parishes was assessed for aquatic plants in August 1989. Lake Bistineau was at pool stage. The water color was a turbid brown color. The Scachi disc reading was thirty five inches (35"). Lake Bistineau was subjected to a high water fluctuation in early summer. The lake had a level of seven feet (7') above pool stage.

The dominant vegetation in the upper end of Lake Bistineau is Bladderwort (utricularia), southern naid (najus), whorled Milfoil (Myriophyllun heterophylum). Infestations are light in most areas.

The dormant vegetation in the mid and lower portion of Lake Bistineau is Bladderwort (utricularea) Southern naid (najas) coontail (cerataphyllun) and the east side Whorled milfoil (Myriophyllum) heterophyllum and in some isolated spots parrot feather (Myriophyllum). Infestations are light in most area and except a few pockets on the east side which are moderately infested.

Lake Bistineau is experiencing an increase in water hyacinths at this time. There is an approximate 20-25 percent infestation at this time. American Lotus was not noted in this assessment.

1989 Type Map – North Section

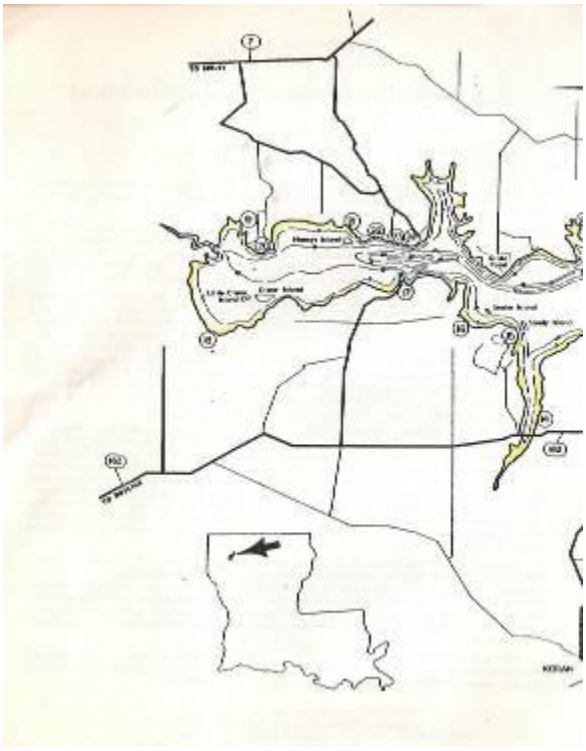
1989 Type Map – South Section

1990 Type Map – Narrative

Lake Bistineau
1990

Lake Bistineau, Webster, Claiborne, and Bienville Parish, was assessed for aquatic plants in July, 1990.
At the time of assessment Lake Bistineau was at pool stage. The water color ranged from clear in the lower end to turbid in the upper end.
The dominant vegetation in the upper half of Lake Bistineau was Utricularia inflata, Myriophyllum heterophyllum, Najas guadalupensis and Ceratophyllum demersum.
The dominant vegetation in the lower half of Lake Bistineau was Utricularia inflata, Myriophyllum heterophyllum and Najas guadalupensis. Other plants noted were considerable amounts of filamentous algae.
Most infestations in Lake Bistineau were light, but there was small sloughs on the east side that were moderately infested.
Water hyacinths were very lightly infested. No emersed plants were in any numbers to cause any problems.
Lake Bistineau was subjected to flood water in June 1990; water levels of 7 feet above pool was noted.

1990 Type Map – North Section



1990 Type Map – South Section


LAKE BISTINEAU
0
1.0
2.0
SCALE IN MILES
POOL STAGE: 141.0'
CONTOUR INTERVAL: 5.0'
DATE: 1971

1991 Type Map - Narrative

LAKE BISTINEAU
1991

At the time of assessment Lake Bistineau was at pool stage. The water color was turbid with a fair plankton bloom. The Secchi disc reading was 32 inches.

The submersed aquatic plants noted were Cabomba, Utricularia spp., Myriophyllum heterophyllum, Ceratophyllum, Chara and Najas guadalupensis.

The emersed aquatic plants noted were nymphae, Ludwigia spp. Polygonum spp. and Typhus.

In summary upper Lake Bistineau has only one area of moderately infested submersed plants, another area is on the lower end. All other areas are very lightly infested or have no plants at all. Lake Bistineau was subjected to flooding in early spring. Water levels reached eight (8) feet above pool stage.

1991 Type Map – North Section

1991 Type Map – South Section


1991
LAKE BISTINEAU
0 1.0 2.0
SCALE IN MILES
POOL STAGE: 141.0'
CONTOUR INTERVAL: 5.0'
DATE: 1971

1992 Type Map - Narrative

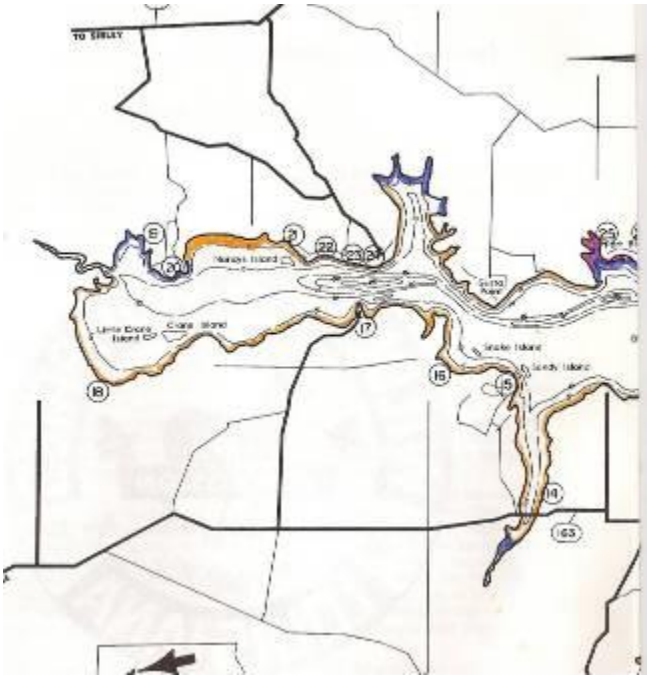
Lake Bistineau
1992

At the time of assessment Lake Bistineau was 18" below pool stage. a gate on the dam and low rainfall caused the low water level this summer. The water color ranged from clear in the lower end to turbid in the upper end. The water showed a fair amount of flocculation.

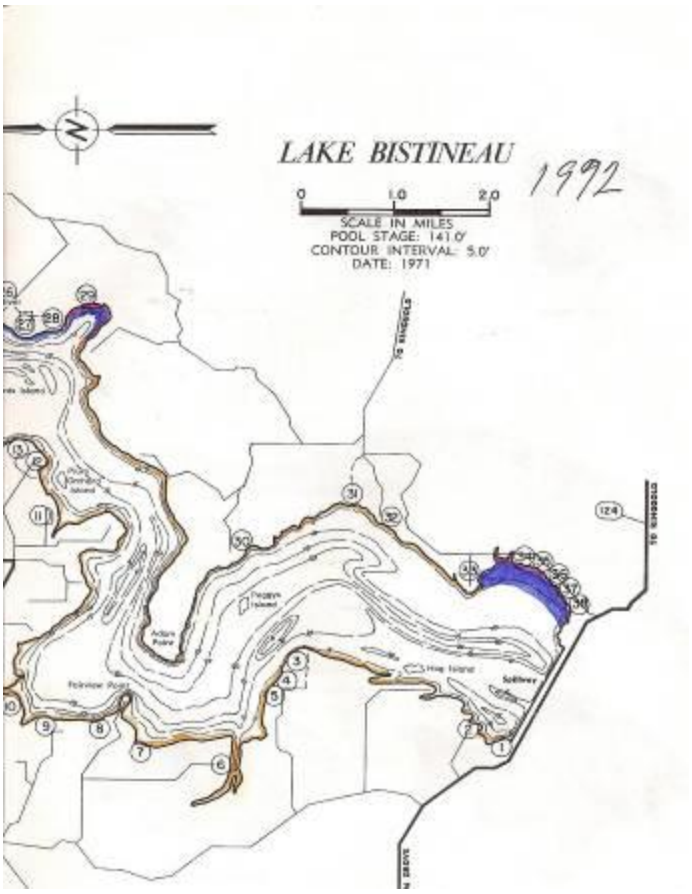
The submersed aquatic plants noted were Cabomba, Ceratophyllum, Milfoil (whorled), Utricularia, Chara, Najas guadalupensis, Hydrocleis and filamentous algae.

There has been increase in aquatic plants in areas in the lower end of the lake. one plant that has increased significantly is Milfoil. There has been increase in water primrose and alligatorweed also.

1992 Type Map – North Section



1992 Type Map – South Section


LAKE BISTINEAU
1992
0 1.0 2.0
SCALE IN MILES
POOL STAGE: 141.0'
CONTOUR INTERVAL: 5.0'
DATE: 1971

1993 Type Map - Narrative

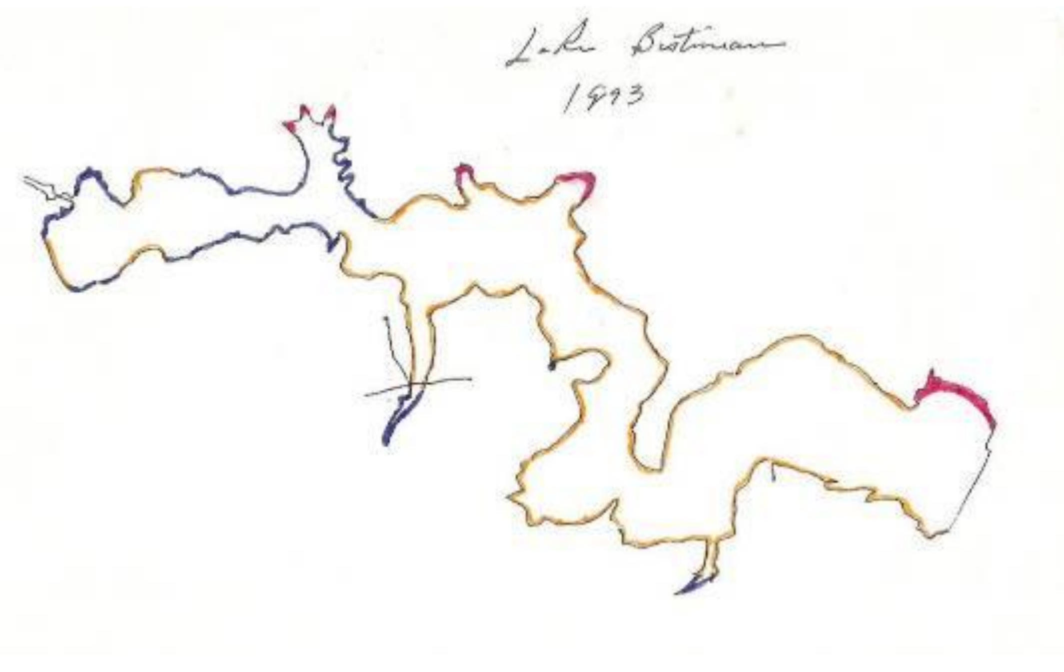
Lake Bistineau
1993

Lake Bistineau was surveyed for aquatic plants in May, 1993.

At the time of survey Lake Bistineau was at pool stage. The water color was clear. The secchi disc reading was 4' feet.

The primary aquatic plant noted was Utricularia. The secondary plants were Cabomba, whorled milfoil, coontail, and southern naiad. Aquatic plants in most areas ranged from moderate to light. Several areas in particular had severe infestations. Big and little Tonkin and also the mill creek areas had severe infestations. Most severe infestations were out to 7' feet and in the mill creek area out to 9' feet.

1993 Type Map



1994 Type Map - Narrative

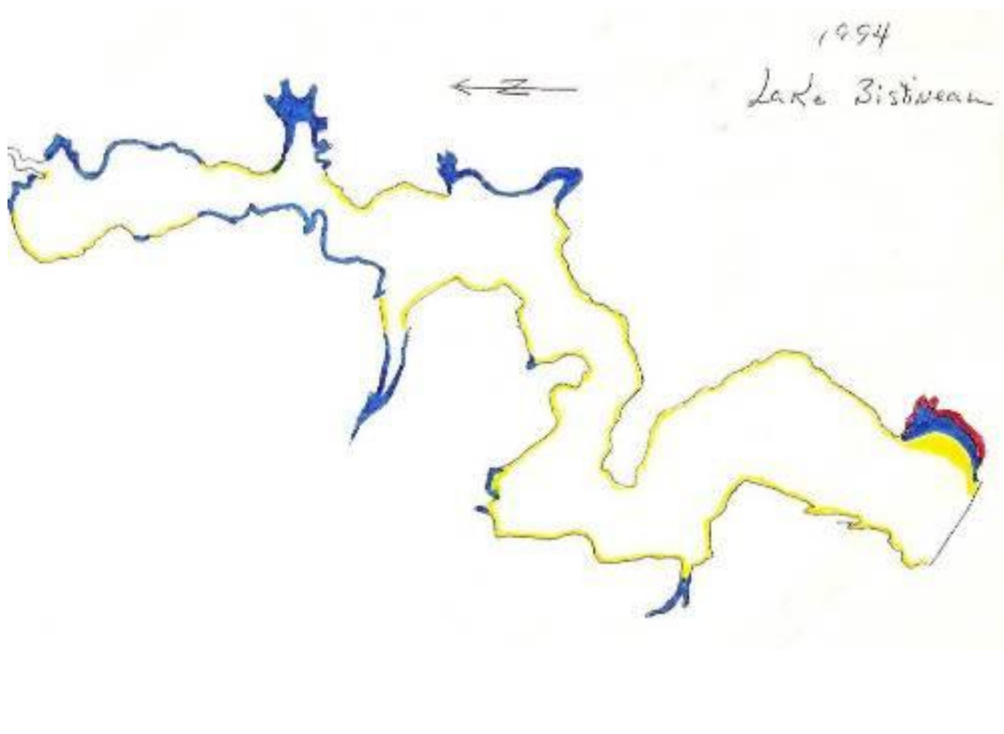
Lake Bistineau
1994

At the time of assessment Lake Bistineau was at pool stage. The water color was clear. The water had some turbidity in the upper end. The Secchi disk reading was 48 inches lower end and 42 inches in the upper end.

The submersed aquatic plants noted were cabomba, utricularia, milfoil, ceratophyllum, potamogeton, southern naiad, chara, and filamentous algae. One area at Mill Creek had an egeria infestation.

The submersed aquatic plants in Lake Bistineau ranged from moderate in the upper end to light in the lower end. There was some increase in water hyacinth in all areas. Infestations of submersed plants are increasing in density and area on the east side of the lake above the dam. Also Big and Little Tousin and the Brushy area have moderate infestations. The plants were breaking at 6 feet.

1994 Type Map



1995 Type Map - Narrative

Lake Bistineau

1995

At the time of assessment Lake Bistineau was below normal pool approximately 15 inches. The water was fairly clear and slightly tinted. The Secchi disc reading was 30 inches.

The submersed aquatic plants noted were Cabomba, Utricularia, Myriophyllum, Najas, and Ceratophyllum. Most infestations of submersed plants were light to moderate. There is a severe infestation of submersed plants north of the dam and also in Big Indian arm of the lake.

The emersed plants noted were smartweed, primrose, alligatorweed, Typhas, Sagittaria and ponditaria

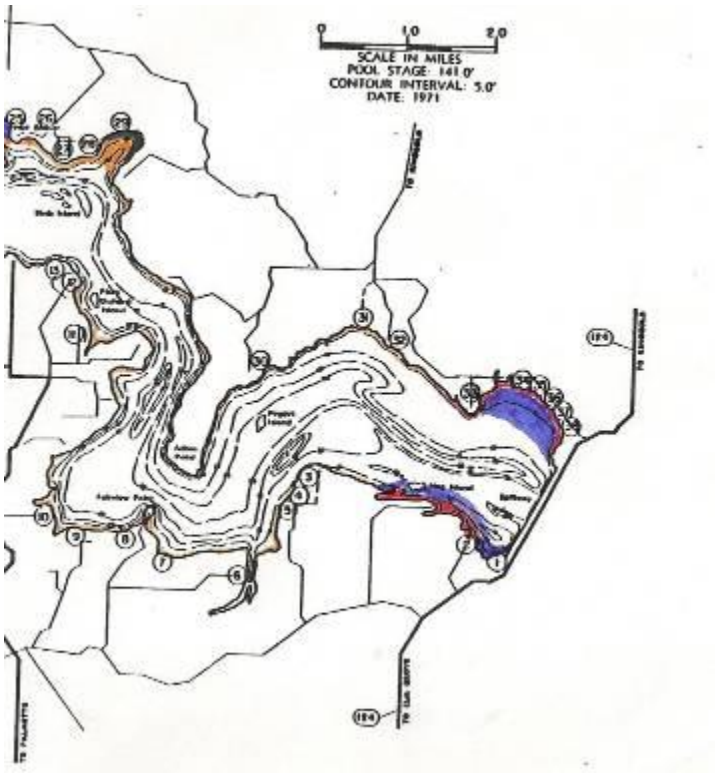
1995 Type Map – Amendment to Narrative

Lake Bistineau
amendment to survey
1995

While making a routine inspection of a sprayed area north of the dam a rooted mat of Hydrilla verticillata was found one half mile north of the dam. This area is usually 12 feet deep.

1995 Type Map – North Section

1995 Type Map – South Section



1997 Type Map - Narrative

1997 Lake
Bistineau

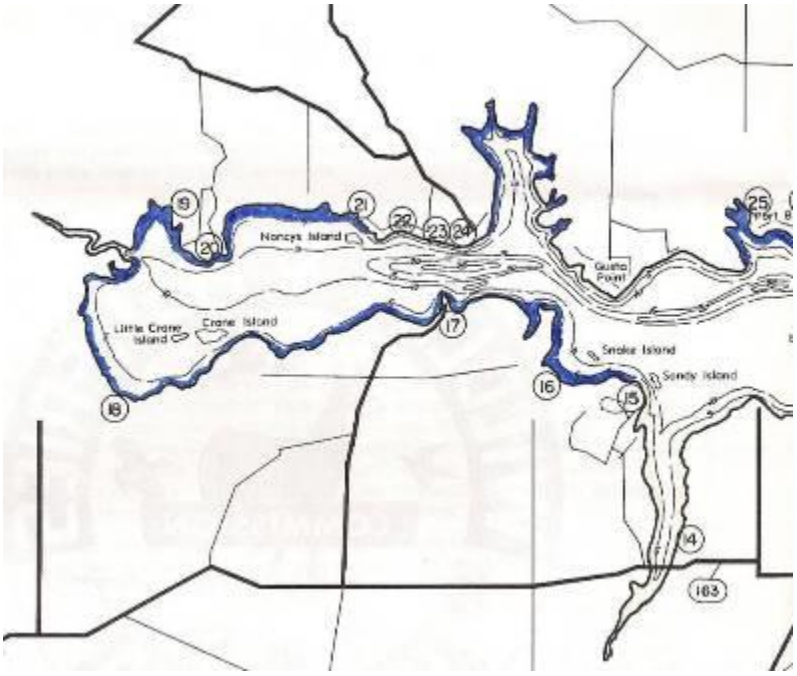
At the time of assessment Lake Bistineau was at pool stage. The water color was clear to stained.

The submersed aquatic plants noted were hydrilla, cabomba, ceratophyllum, milfoil, utricularia, chara, filamentons algae, potamogeton, and Southern naiad.

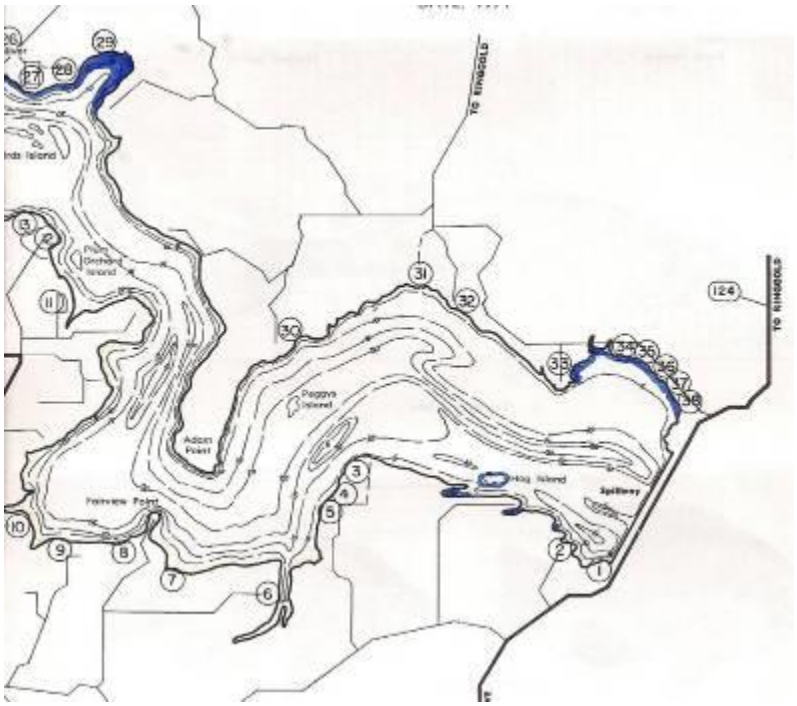
The floating and emersed plants noted were water hyacinths, primrose, smart weed, alligator weed, arrowhead, bullrush, and miscellaneous sedges and grasses.

The distribution of plants in Lake Bistineau was light in most areas and moderate in a few areas in the upper end. Lake Bistineau has a ten percent infestation.

1997 Type Map – North Section



1997 Type Map – South Section

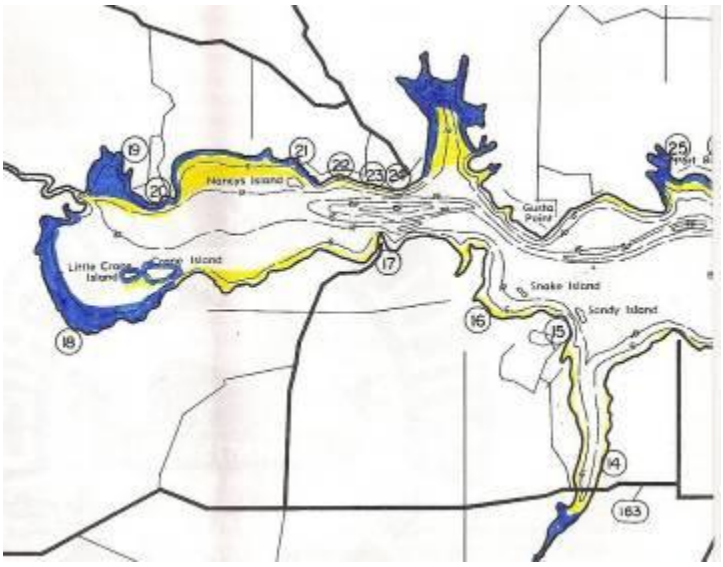


1998 Type Map - Narrative

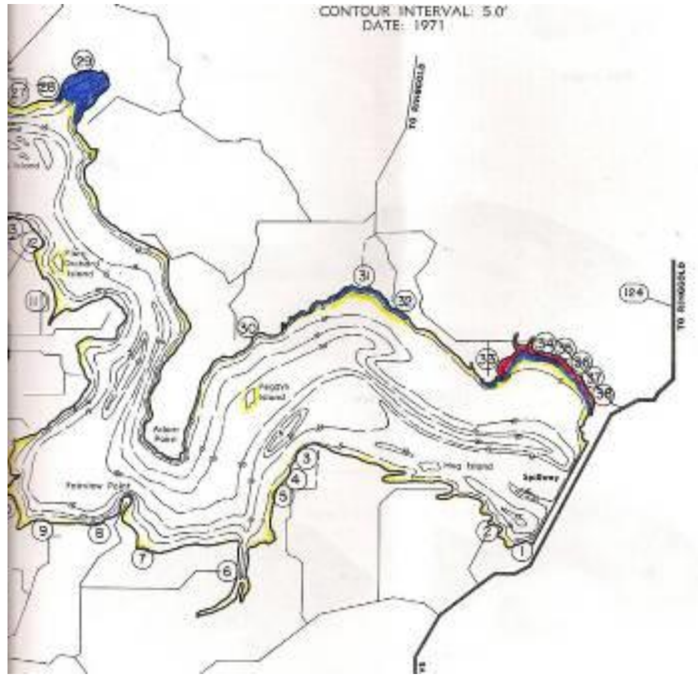
LAKE BISTINEAU 1998 Melvin Bagwell

At the time of assessment, Lake Bistineau was at pool stage. The water color was clear to stained. The aquatic plants surveyed were hydrilla, fanwort, coontail, bladderwort, milfoil, Chara, and filamentous algae. The floating and emersed plants surveyed were water hyacinth, water primrose, smartweed, alligatorweed, duckweed, white water lily, lotus, and bulrush. The distribution of aquatic plants in Lake Bistineau was light in most areas and moderate in the upper end. Total infested area was an estimated 15%.

1998 Type Map – North Section



1998 Type Map – South Section


CONTOUR INTERVAL: 5.0'
DATE: 1971
TO RINGGOLD
TO RINGGOLD
124
Hog Island
Spillway
Fairview Point
31
32
30
29
28
27
1
2
3
4
5
6
7
8
9

1999 Type Map – Narrative

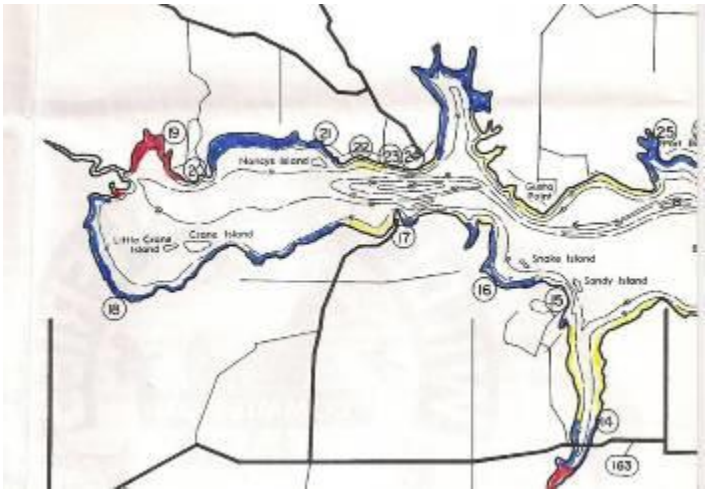
Lake Bistineau

1999

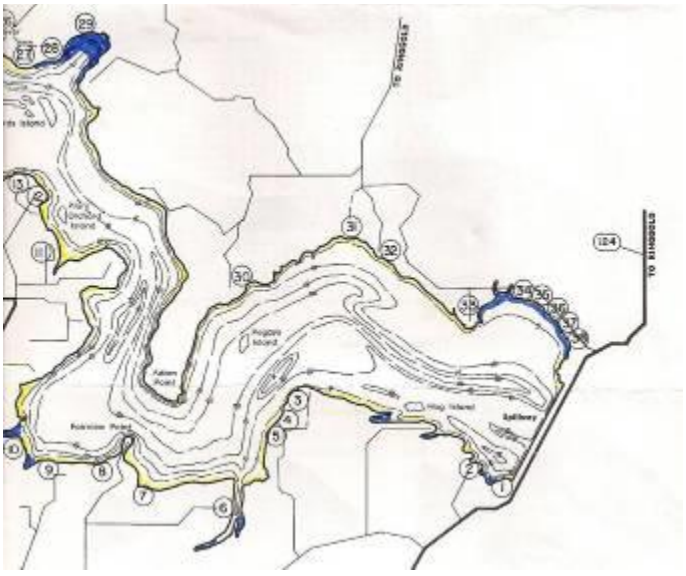
Melvin Bagwell

At time of the assessment, Lake Bistineau was ten inches below pool; water color was clear. The submersed aquatic plants noted were fanwort (Cabomba caroliniana), coontail (Ceratophyllum demersum), bladderwort (Utricularia sp.), southern naiad (Najas guadalupensis), milfoil (Myriophyllum sp.), filamentous algae, hydrilla (Hydrilla verticillata), and Chara sp. The emersed aquatic plants noted were lotus (Nelumbo lutea), white water lily (Nymphaea odorata), cattail (Typha latifolia), water hyacinth (Eichhornia crassipes), smartweed (Polygonum sp.), alligatorweed (Alternanthera philoxeroides), and primrose (Ludwigia sp.). The infestations of submersed aquatic plants ranged from light in most areas to moderate and severe in the extreme ends of the arms in the upper end. The infestations of emersed aquatic plants were light and marginal.

1999 Type Map – North Section



1999 Type Map – South Section

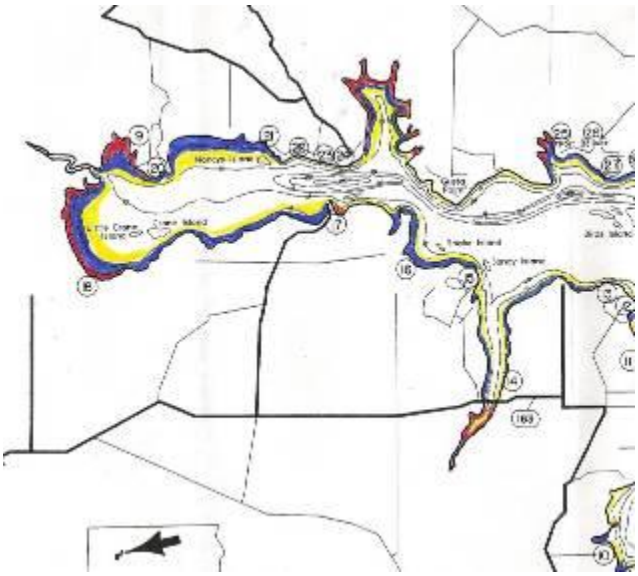


2000 Type Map - Narrative

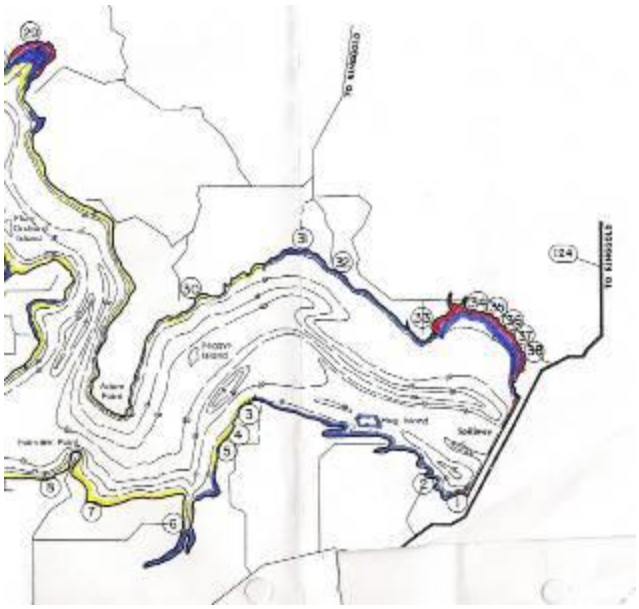
Lake Bistineau -2000
Melvin Bagwell

At the time of the assessment Lake Bistineau was 8 inches below pool stage. The water color was fairly clear. The infestations of aquatic plants ranged from severe to light. Moderate and light infestations were out to seven feet. The submersed aquatic plants noted were Cabomba, coontail, Utricularia, milfoil, hydrilla, southern naiad, Chara, and filamentous algae. The percentage of total infestation in Lake Bistineau was an estimated 15 percent.

2000 Type Map – North Section



2000 Type Map – South Section



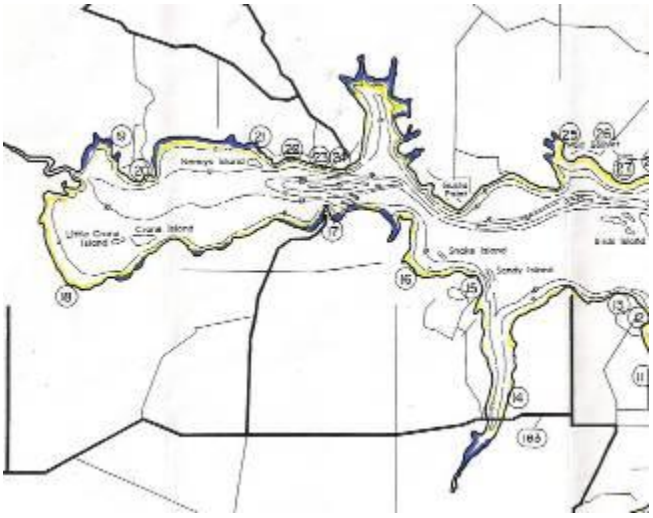
2001 Type Map – Narrative

LAKE BISTINEAU - June 2001

Melvin Bagwell

Lake Bistineau was surveyed for the presence of aquatic plants on June 25, 2001. At this time the lake was at pool stage. The water color was fairly clear. The submersed plants noted were: coontail *(Ceratophyllum demersum),* southern naiad *(Najas guadelupensis),* bladderwort *(Utricularia sp.),* filamentous algae, hydrilla *(Hydrilla verticillata),* Chara and pondweed *(Potomogeton sp,).* The emersed aquatic plants noted were: water hyacinth *(Eichhornia crassipes),* white water lily *(Nymphaea odorata),* American lotus *(Nelumbo lutea),* and watershield *(Brasenia schreberi).* The estimated percent coverage of submersed plants was less than 10%.

2001 Type Map – North Section



2001 Type Map – South Section


6-25-01

2005 Type Map - Narrative

Lake Bistineau - 2005

Vegetation Type Map

The vegetation type mapping survey was performed between 6-13-05 and 7-12-05 prior to dewatering the lake for a second of three recommended consecutive drawdowns. Employees from the Louisiana Department of Wildlife and Fisheries identified the aquatic vegetation species present in the lake and assessed the extent of coverage around the lake.

Species Present

The aquatic plant community on Lake Bistineau can best be described as a conglomerate of emergent, submergent and floating plants that includes the following species: alligator weed (*Alternanthera philoxeroides*), primrose species (*Ludwigia spp*.), water hyacinths (*Eichhornia crassipes*), American lotus (*Nelumbo lutea*), purple bladderwort (*Utricularia purpurea*), variable leaf milfoil (*Myriophyllum heterophyllum*), parrotfeather (*Myriophyllum aquaticum*), Duckweed(*Lemna minor*), water meal (*Wolffia Columbiana*), water fern (*Salvinia rotundifolia*), Southern watergrass (*Hydrochloa caroliniensis*), cutgrass (*Leersia hexandra*), water paspalum (*Paspalum fluitans*), Illinois pondweed (*Potamogeton illinoensis*), pennywort (*Hydrocotyle spp*.), coontail (*Ceratophyllum demersum*), Fragrant waterlily (*Nymphaea odorata*), roadgrass (*Eleocharis baldwinii*), arrowhead (*Sagittaria* spp.), Baby tears (*Bacopa moneria*), filamentous algae, Hydrilla (*Hydrilla verticillata*), and charagrass (*Chara* spp.).

Severity

Percent coverage of aquatic vegetation is estimated to be 25-30%. The emergent vegetation presents the largest problem with alligator weed and primrose being the most abundant plants. In the most severe areas, these two species are present with the milfoil, chara, bladderwort and roadgrass mixed in. Most of the above species are not dense enough to cause a problem with public access; they are merely scattered in with the alligator weed and primrose. This alligator weed/ primrose/milfoil combination is more severe on the north end of the lake and the extreme southeastern corner (see map) . The vegetation is not as dense in the mid-lake area where more open water and fewer trees are present. Wind action and increased depth in this area probably adds to the reduction in the vegetation density.

This alligatorweed/ primrose/ milfoil combination of vegetation is present around most of the lake, but does not seem to expand much beyond the five foot contour line. There are some scattered patches of alligator weed present in the cypress tree “forests” away from the shore line. Also, the submerged vegetation is more prevalent in the southeastern portion of the lake, below the Bienville Public ramp.

Other problematic plants are American lotus, fragrant water lily, hydrilla, and water hyacinths. These are generally localized populations. Hydrilla is present around the Bossier Parish public boat launch at moderate levels. Lotus is severe in some extremely shallow areas of the lake and the water lilies pose a problem in the area between Camp Bistineau and Camp Joy along the western shore. Water hyacinths

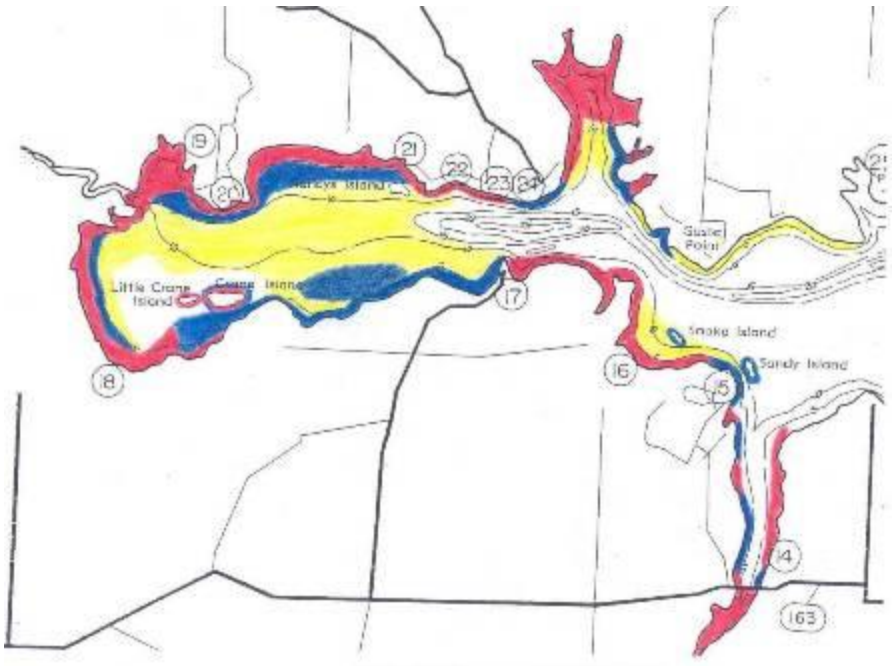
are severe in some small areas of the lake, such as the back end of Big Toodlum. This population is blocked into the area by a stand of dense trees and other vegetation and is not likely to drift away.

Management/History

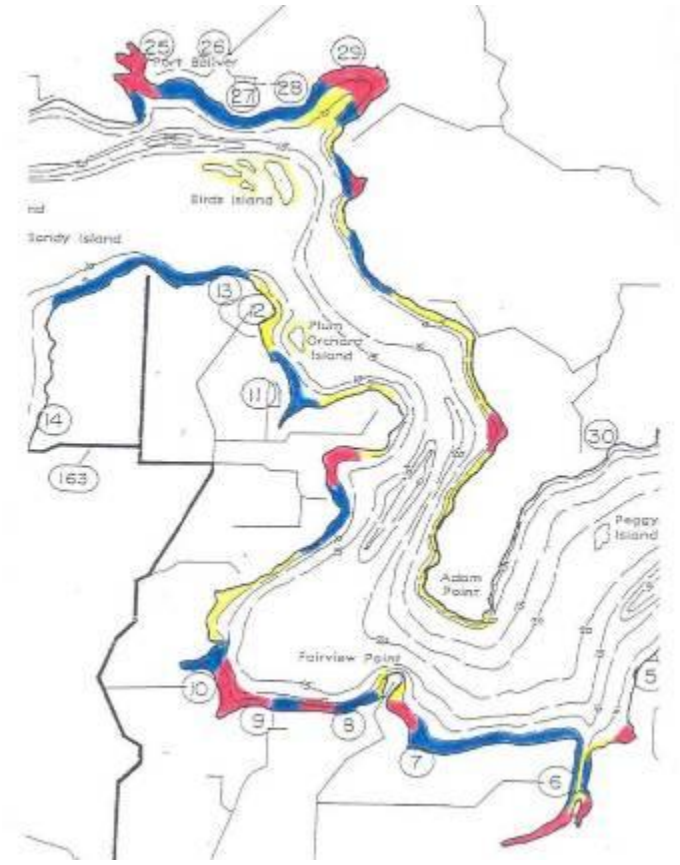
Lake Bistineau was slated to begin a series of three consecutive 7 foot summer drawdowns in July, 2004; for the purpose of improving bottom habitat. Vegetation control was a secondary goal. Lake Bistineau has a history of vegetation problems. Hyacinths have been found in the lake for more than 50 years and have covered large portions of the lake in the past. The lake is experiencing a buildup of organic "muck" on the lake bottom that is causing a reduction in sportfish populations. This organic layer is preventing successful spawning of sunfish and other nest building fish. Years of decaying vegetation and leaf litter from the cypress canopy have led to this "muck". The drawdowns were scheduled for mid-July through January so as to utilize summer heat to dry the lake bed.

The 2004 drawdown was moderately successful. The lake filled to pool earlier than expected by fall rains, but many positive signs were observed. Hyacinths numbers were greatly reduced and some drying action occurred on the lake bottom. The 2005 drawdown has been a success. Drought conditions allowed for excellent drying of the lake bottom and the lake has remained down from July until the completion of this document (12-14-05). Aquatic vegetation has been exposed dry, hot conditions and several light frosts and cold temperatures; therefore, densities should be lower in the near future.

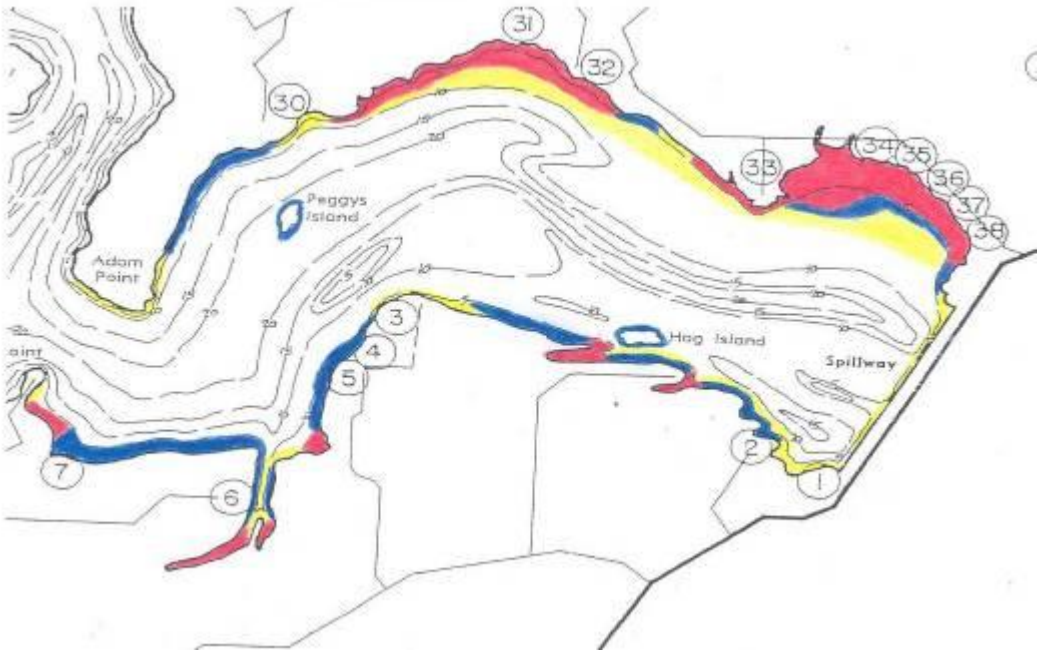
2005 Type Map – North Section



2005 Type Map – Middle Section



2005 Type Map – South Section



2006 Type Map - Narrative

Lake Bistineau
Vegetation Type Map
2006

The vegetation type mapping survey was performed between 5-16-06 and 6-1-06. Employees from the Louisiana Department of Wildlife and Fisheries identified the aquatic vegetation species present in the lake and assessed the extent of coverage around the lake. During the time of the survey, the lake was clear and at pool stage.

Species Present

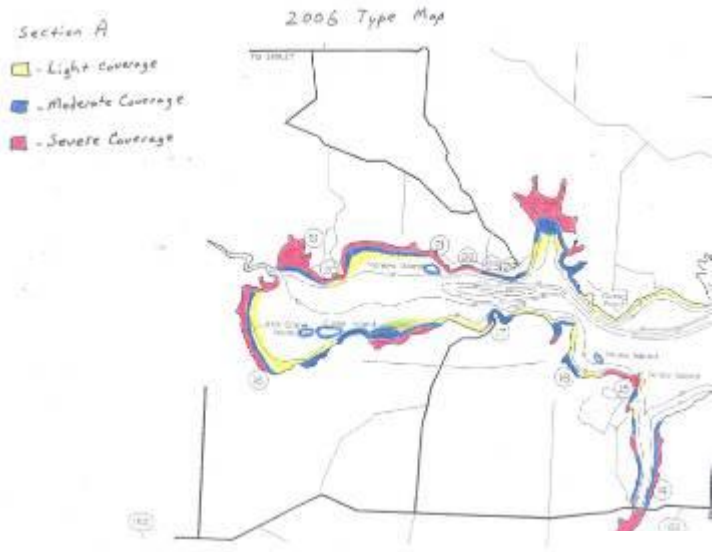
The dominant species on Lake Bistineau is Alligatorweed (*Alternanthera philoxeroides*). The lake is coming off of two consecutive summer drawdowns for bottom habitat improvement. The vegetation community of the lake has been greatly altered following the drawdowns. The alligatorweed survived the dewatering better than any other species and has grown rapidly with the lack of competition. There is a fringe of Alligatorweed around almost the entire lake except in areas very close to deep water or where wave action prevents weed growth. The following species are also found on the lake, but at fairly low densities: Giant Salvinia (*Salvinia molesta*), Duckweed (*Lemna minor*), primrose species (*Ludwigia spp*.), water hyacinths(Eichornia crassipes), American Lotus (*Nelumbo lutea*), Watermeal (*Wolffia Columbiana*), cutgrass (*Leersia hexandra*), pennywort (*Hydrocotyle spp.*), coontail (*Ceratophyllum demersum*), fragrant water lily (*Nymphaea odorata*), roadgrass (*Eleocharis baldwinii*), baby tears (*Bacopa moneria*), filamentous algae, Chara grass (*Chara spp*.), and willow trees (*Salix nigra*).

Severity

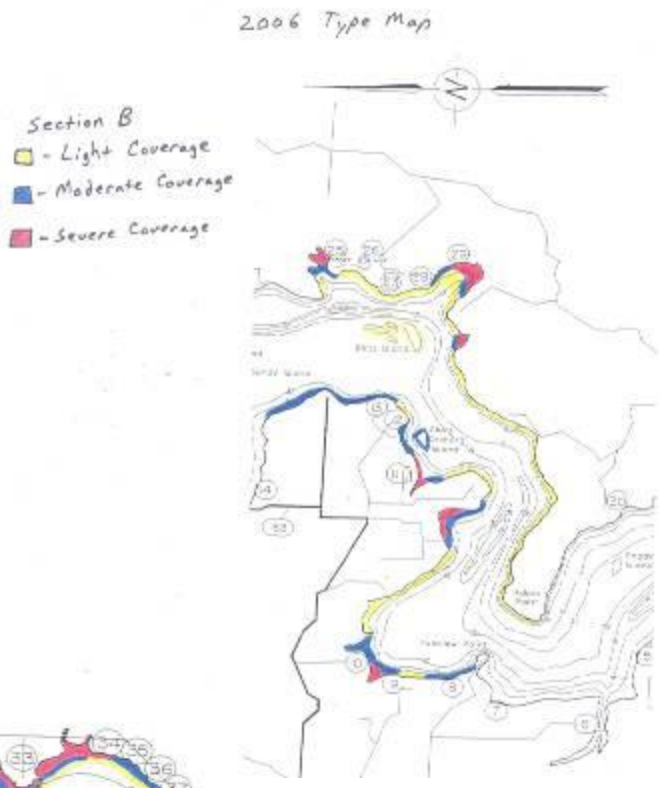
Percent coverage of aquatic vegetation is estimated to be 12.7% with approximately 2,200 acres of vegetation. Alligatorweed poses the largest problem as it is dense in many areas of the lake near camps and public access areas along the shoreline. The alligator weed is found out to the four foot contour of the lake. It is more dense in the upper parts of the lake and on the southeast corner of the lake. Wind action and increased depth in the mid-lake area help reduce vegetation densities.

Willow trees grew in certain areas of the lake during the drawdowns and are dense in these small areas. Willows are found in the Tadpole Slough area, above the bridge on Clark's Bayou and on the southeast corner of the lake below the Bienville public launch. Giant Salvinia was first identified on the lake in February 2006 and has only been found in the area from Peggy's Island to the dam. At the time of this survey, Giant Salvinia was at low densities and no large mats have been found. It is scattered throughout this part of the lake, but appears to be multiplying. The plants found have a "juvenile" appearance and have not taken on the characteristic large size and cupped leaves of Giant Salvinia. The other species found in the lake are at relatively low densities and do not currently pose any problems.

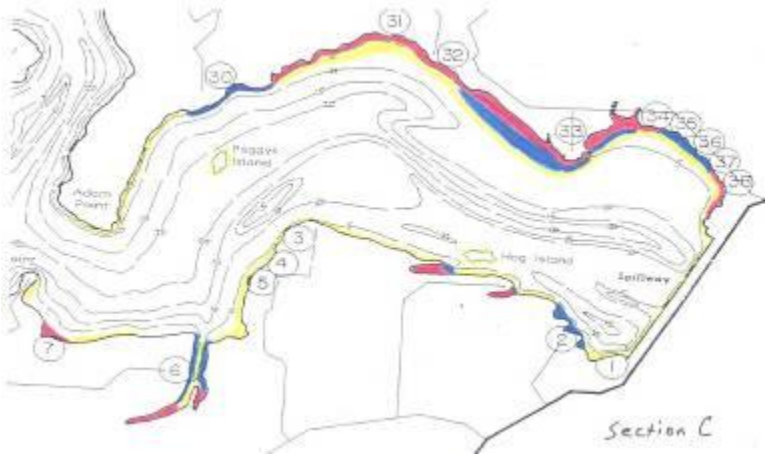
2006 Type Map – North Section

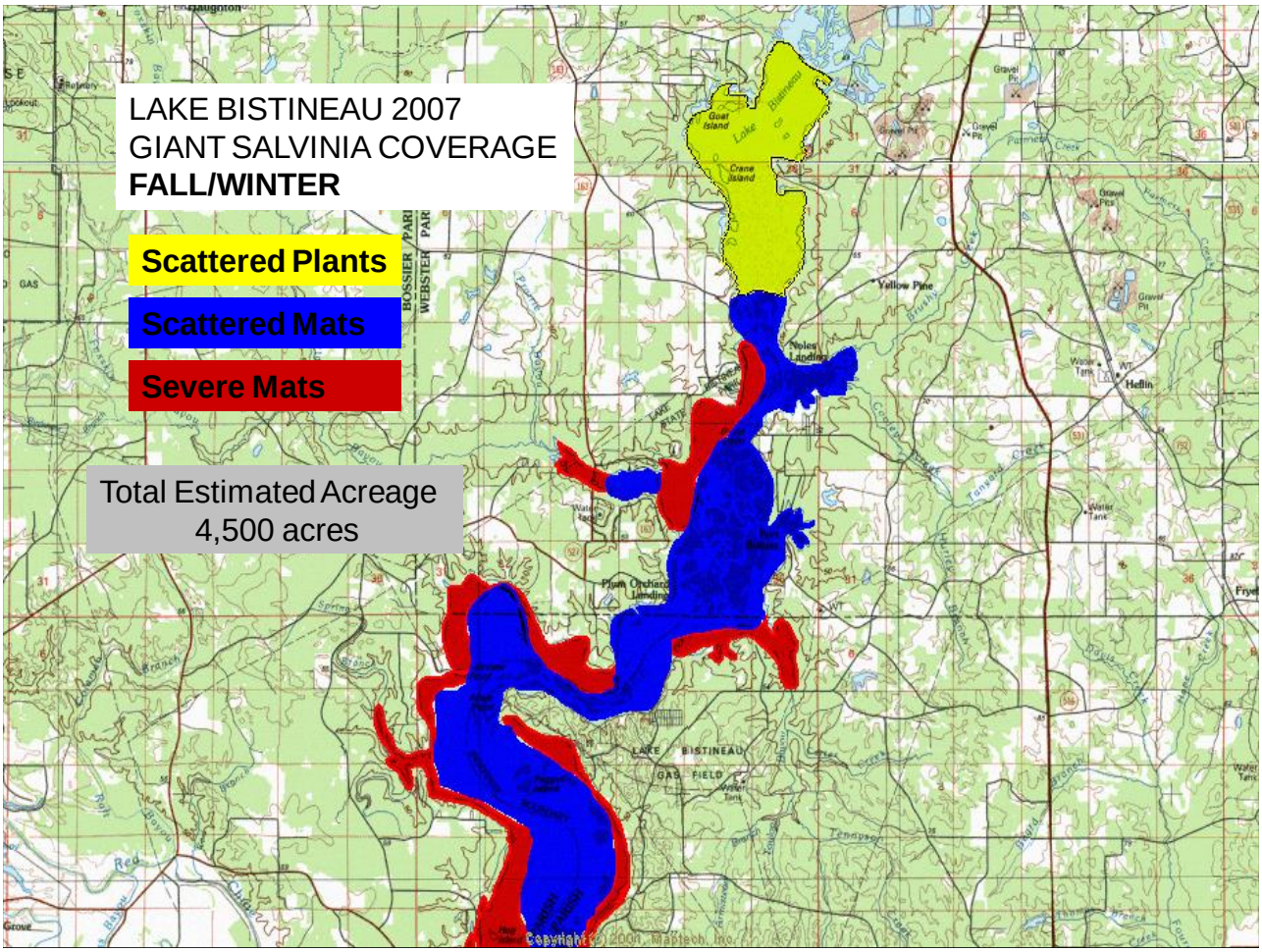


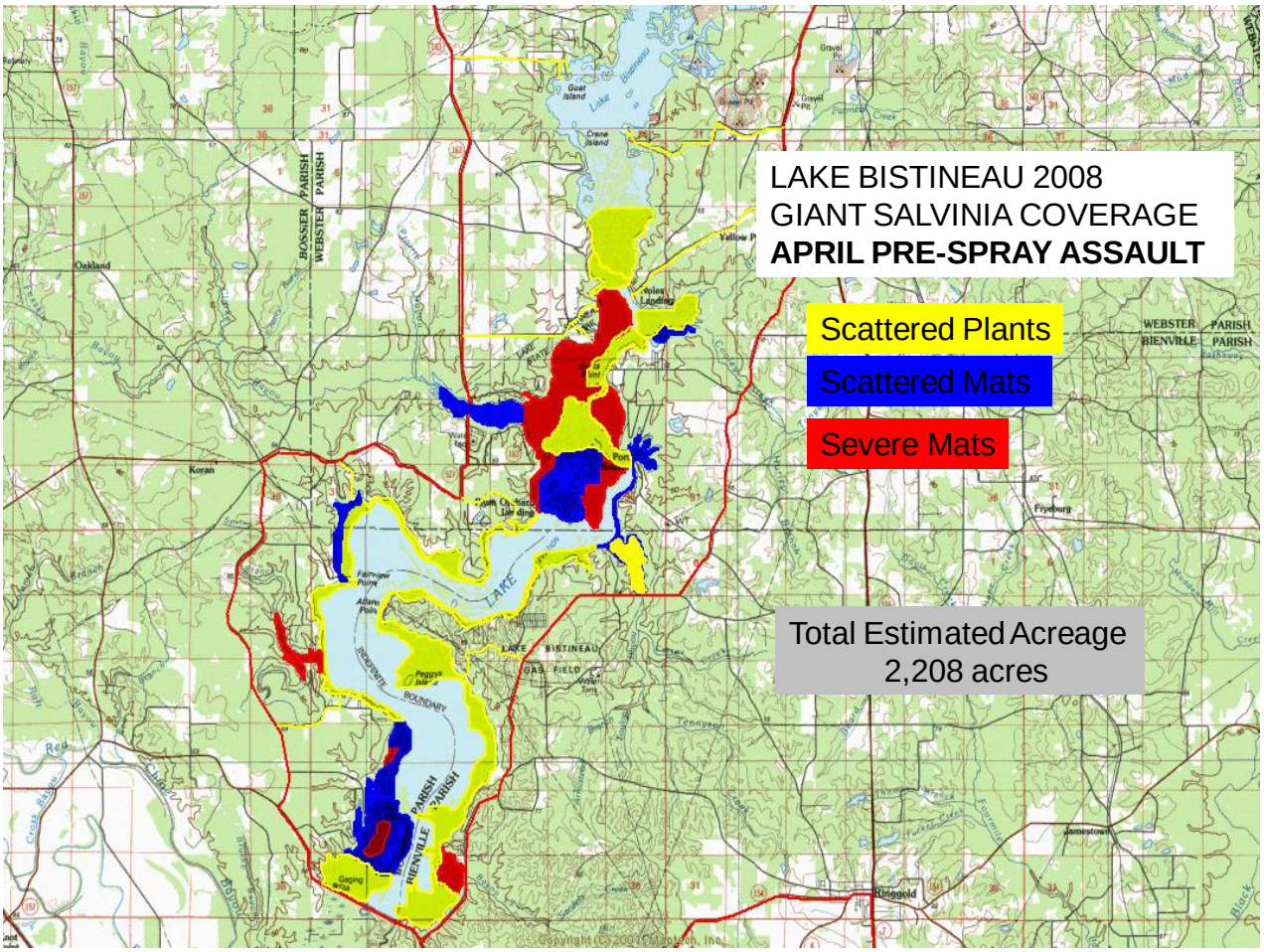
2006 Type Map – Middle Section

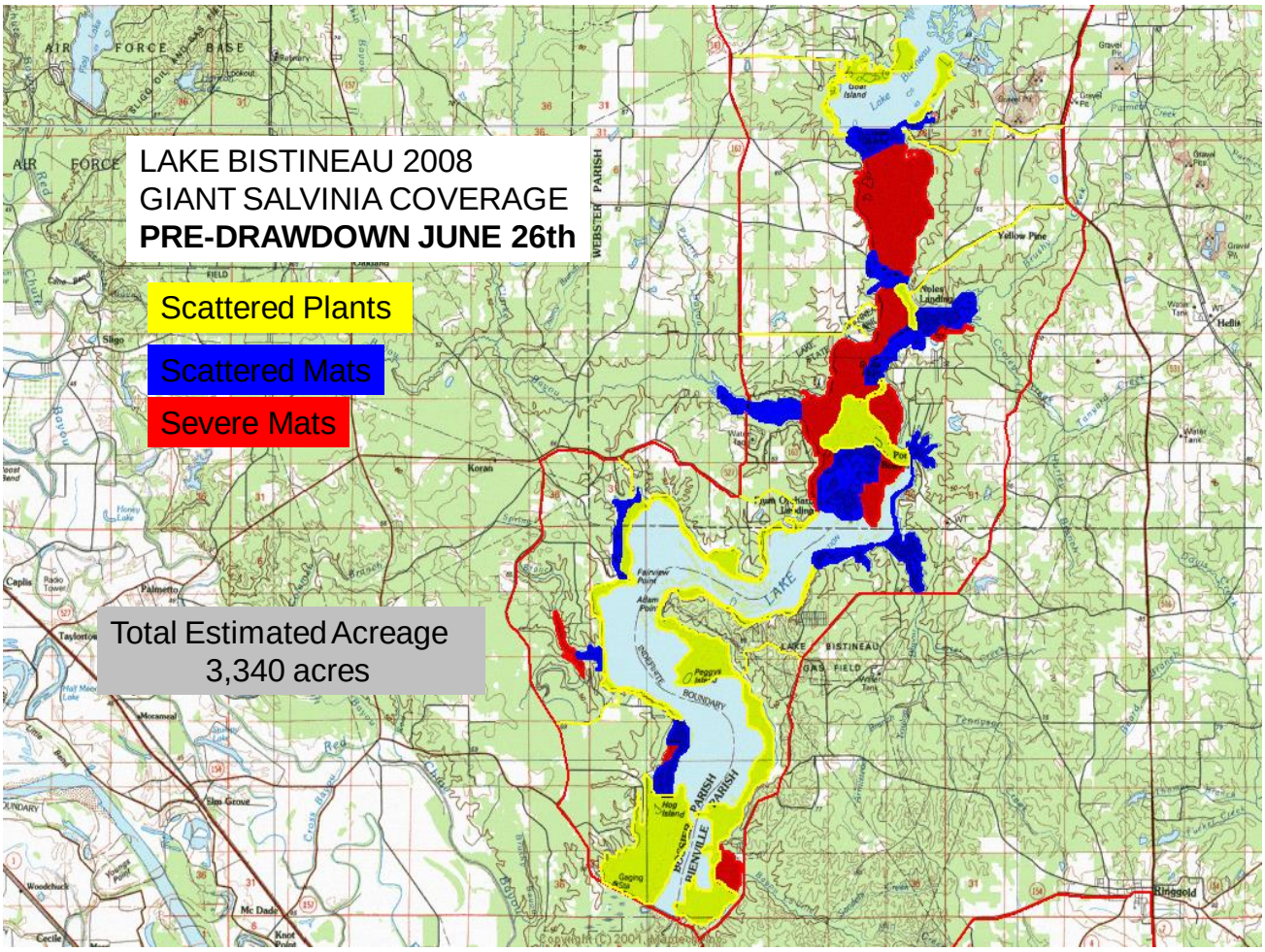


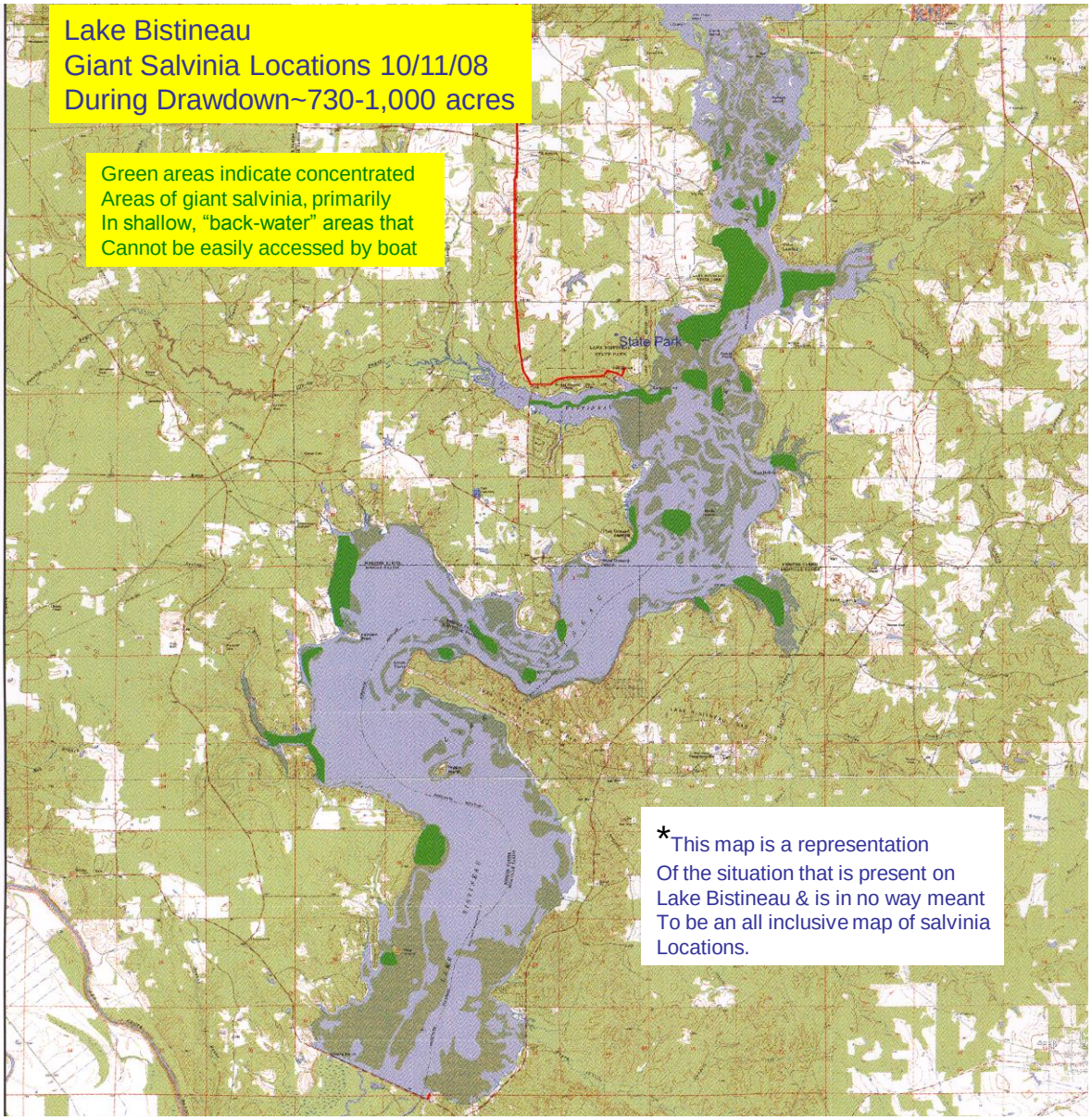
2006 Type Map – South Section

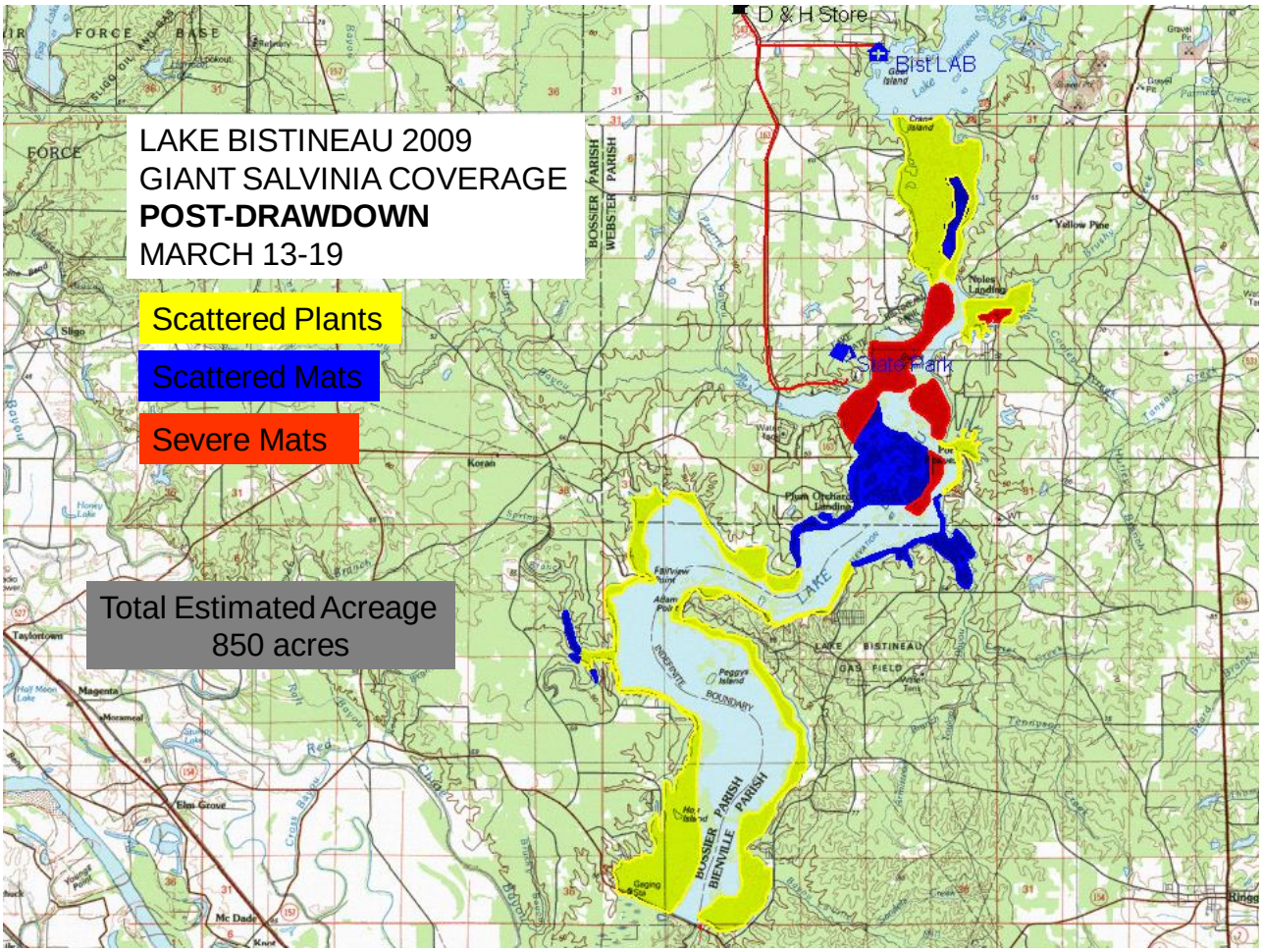


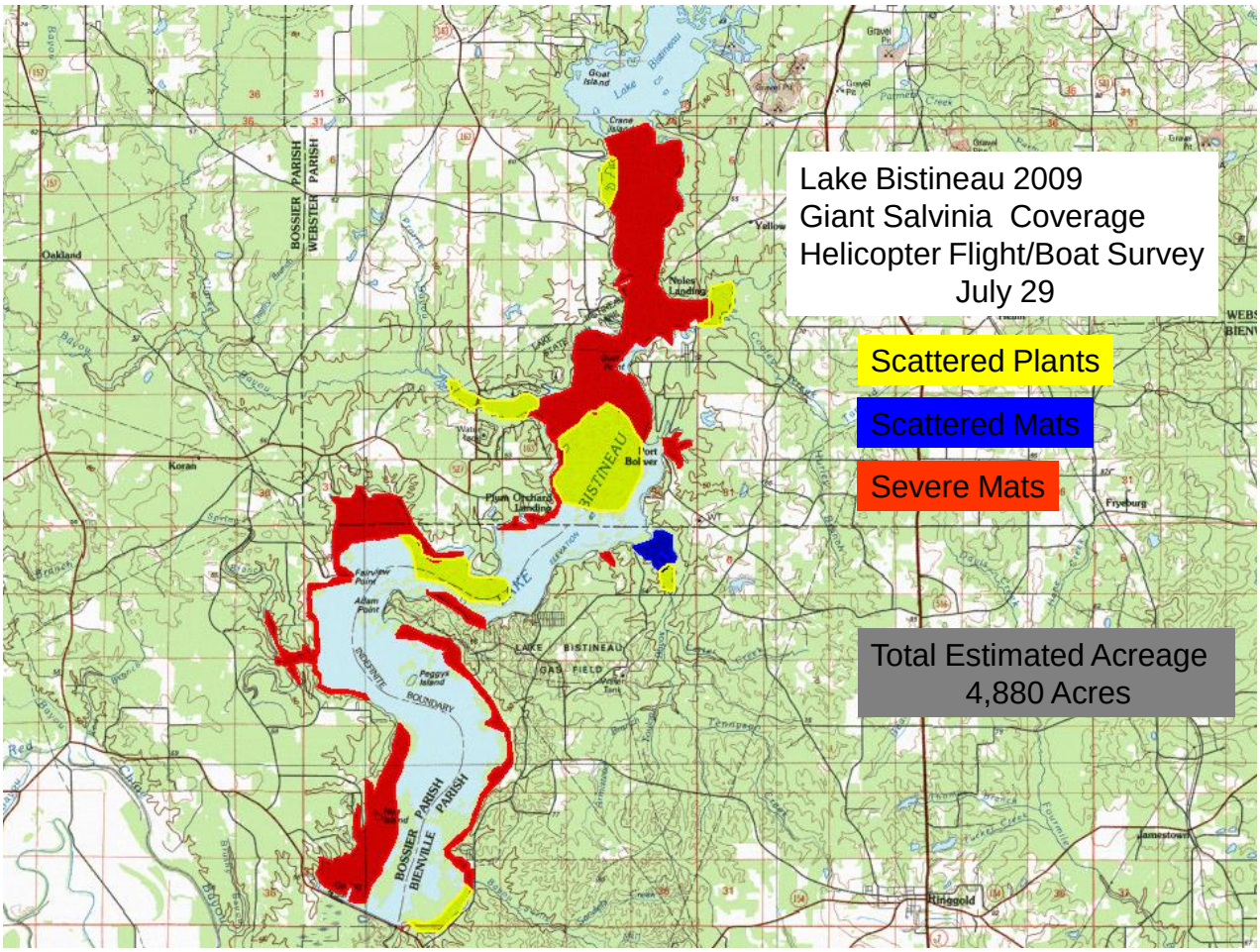

LAKE BISTINEAU 2007
GIANT SALVINIA COVERAGE
FALL/WINTER
Scattered Plants
Scattered Mats
Severe Mats
Total Estimated Acreage
4,500 acres
LAKE BISTINEAU
GAS FIELD
Yellow Pine
Noles Landing
Plum Orchard Landing
Goat Island
Crane Island
Lake Bistineau
Copyright © 2001, Maptech, Inc.

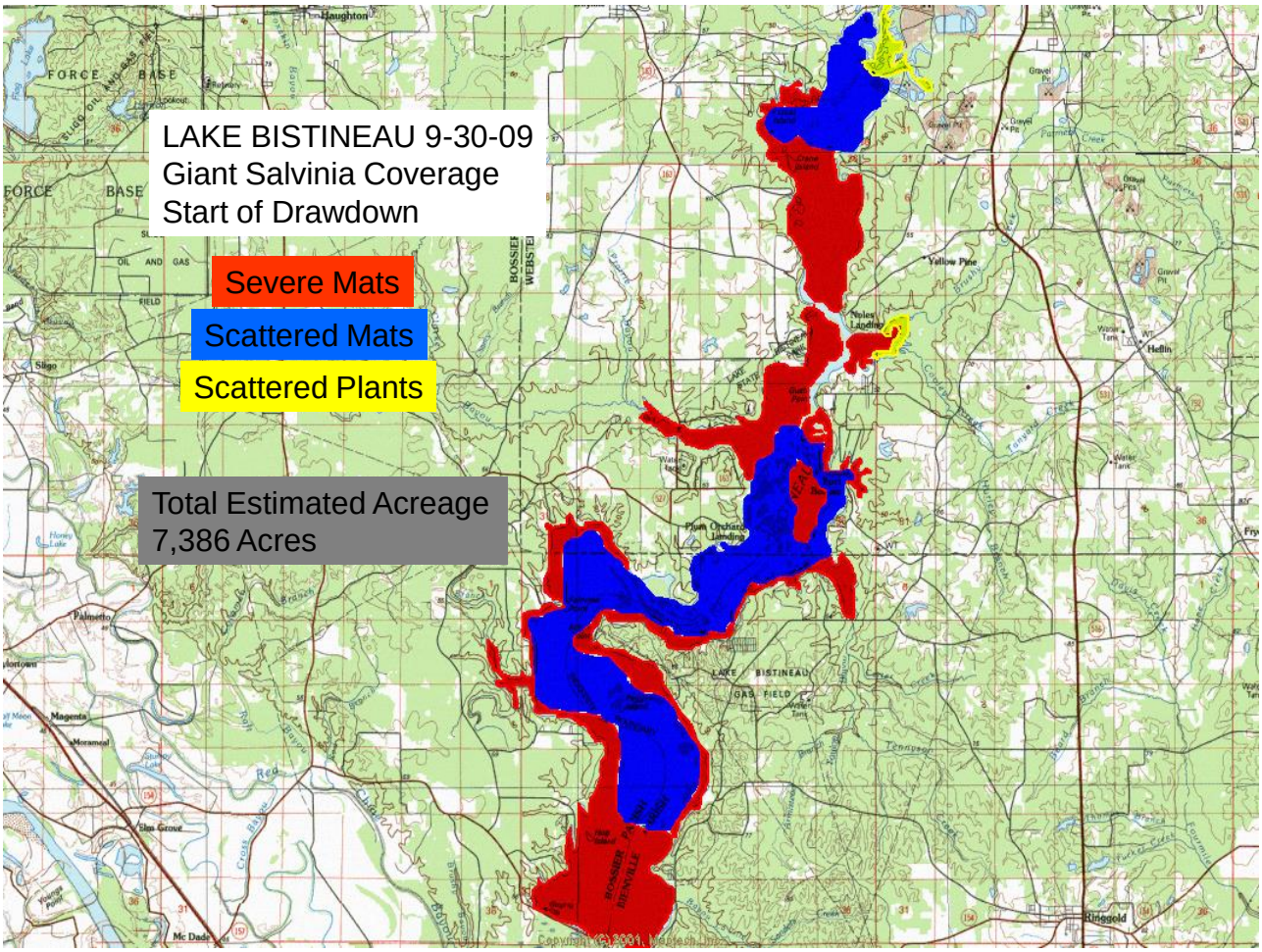

LAKE BISTINEAU 2008
GIANT SALVINIA COVERAGE
APRIL PRE-SPRAY ASSAULT
Scattered Plants
Scattered Mats
Severe Mats
Total Estimated Acreage
2,208 acres

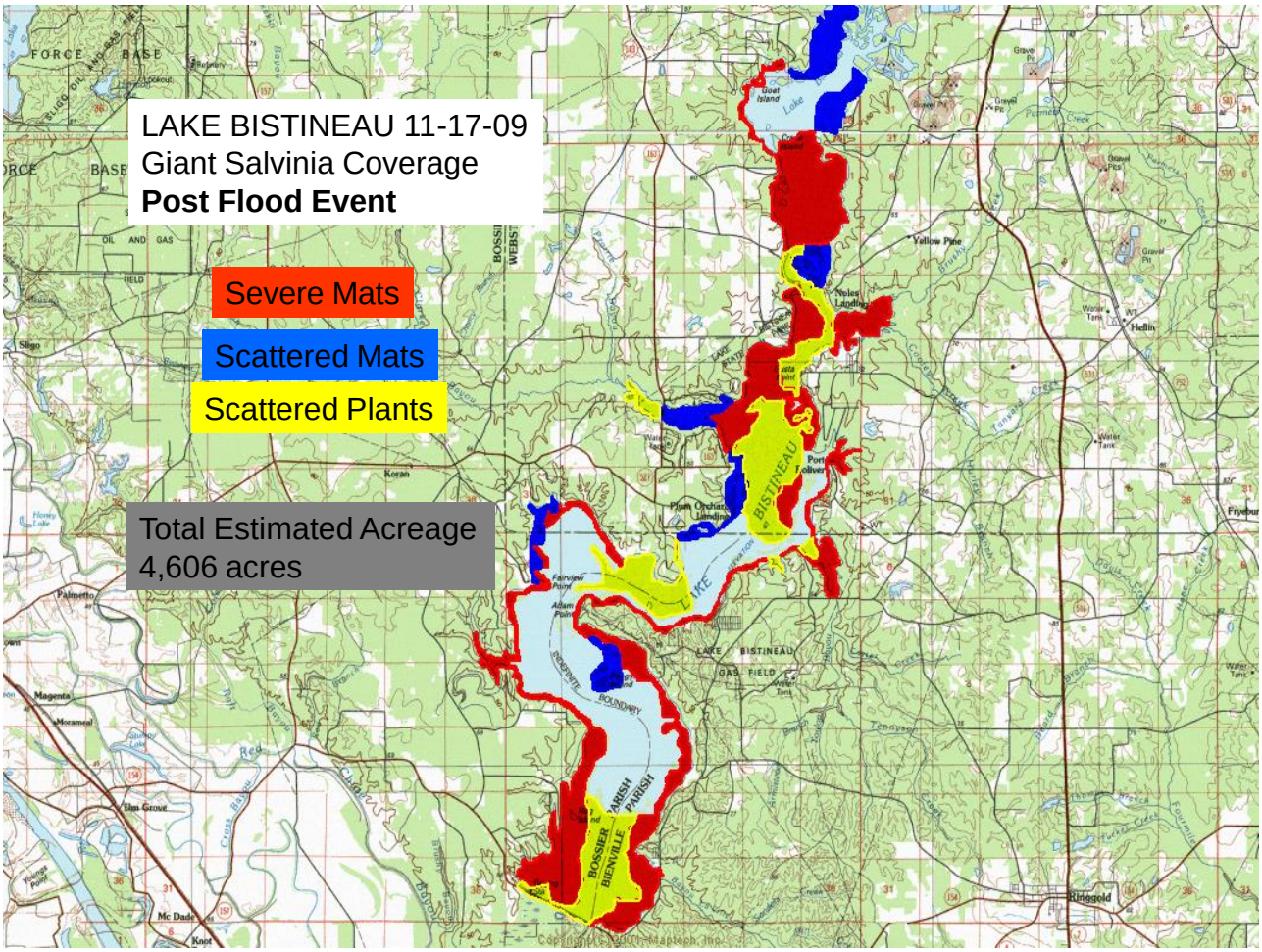

LAKE BISTINEAU 2008
GIANT SALVINIA COVERAGE
PRE-DRAWDOWN JUNE 26th
Scattered Plants
Scattered Mats
Severe Mats
Total Estimated Acreage
3,340 acres


Lake Bistineau
Giant Salvinia Locations 10/11/08
During Drawdown~730-1,000 acres
Green areas indicate concentrated
Areas of giant salvinia, primarily
In shallow, “back-water” areas that
Cannot be easily accessed by boat
State Park
*This map is a representation
Of the situation that is present on
Lake Bistineau & is in no way meant
To be an all inclusive map of salvinia
Locations.

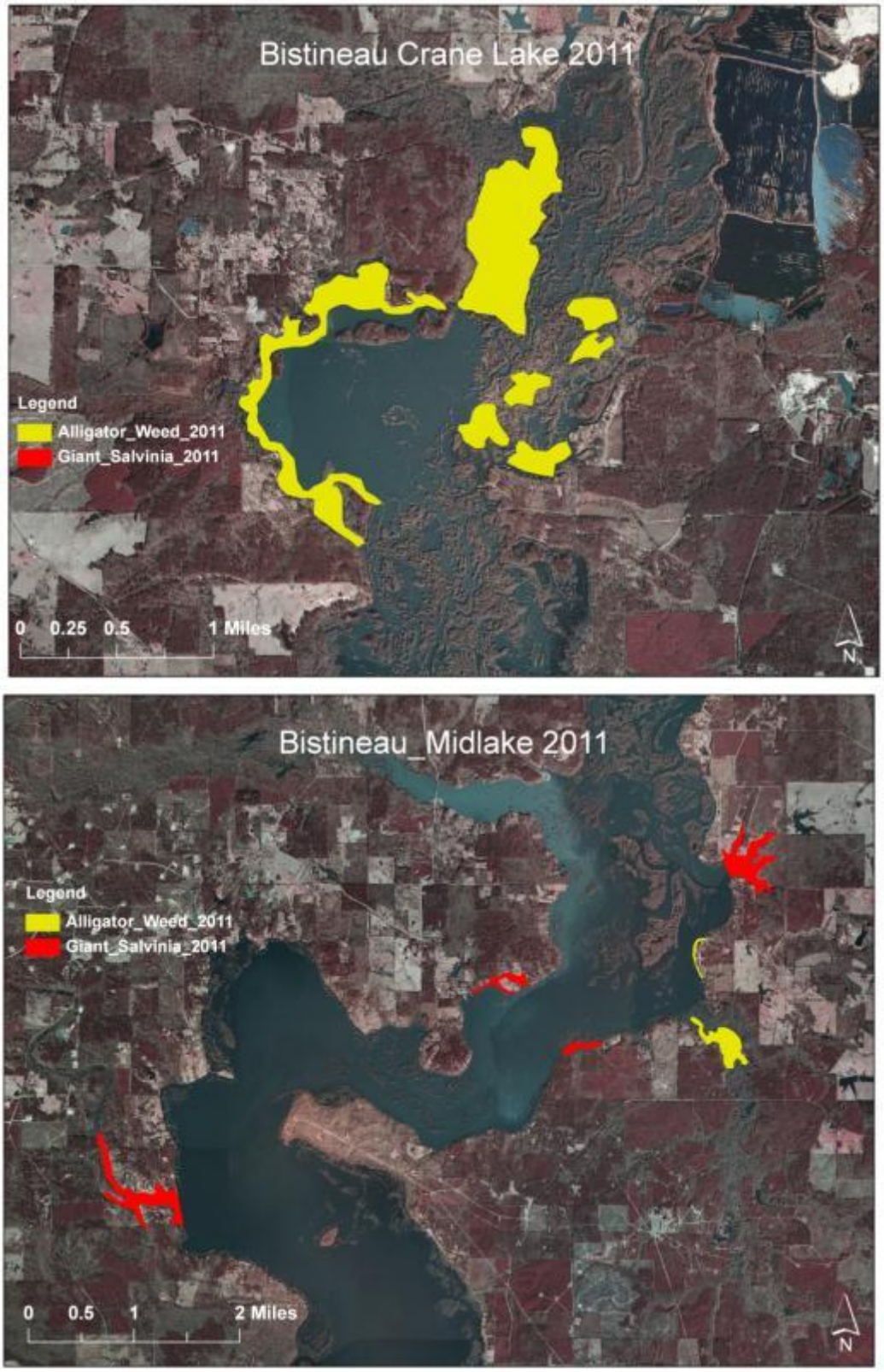

LAKE BISTINEAU 2009
GIANT SALVINIA COVERAGE
POST-DRAWDOWN
MARCH 13-19
Scattered Plants
Scattered Mats
Severe Mats
Total Estimated Acreage
850 acres
D & H Store
Bist LAB
State Park
LAKE BISTINEAU
GAS FIELD
BOUNDARY
BOSSIER PARISH
WEBSTER PARISH
BIENVILLE PARISH


Lake Bistineau 2009
Giant Salvinia Coverage
Helicopter Flight/Boat Survey
July 29
Scattered Plants
Scattered Mats
Severe Mats
Total Estimated Acreage
4,880 Acres
BOSSIER PARISH
WEBSTER PARISH
BOSSIER PARISH
BIENVILLE PARISH
LAKE BISTINEAU
GAS FIELD
BOUNDARY
Oakland
Korah
Plum Orchard Landing
Niles Landing
Fairview Point
Adam Point
Peggys Island
Ringgold
Jamestown
Fryeburg

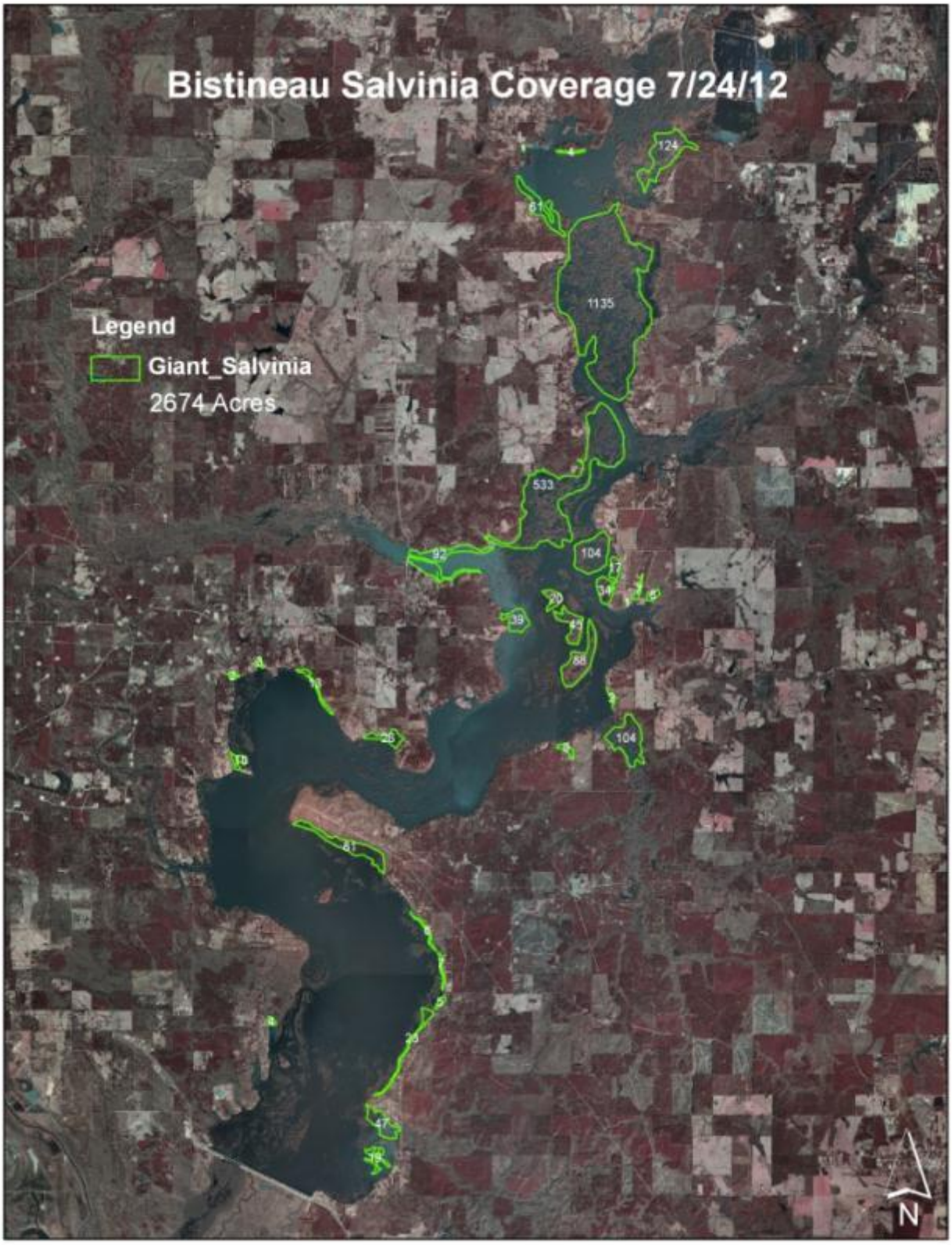

LAKE BISTINEAU 9-30-09
Giant Salvinia Coverage
Start of Drawdown
Severe Mats
Scattered Mats
Scattered Plants
Total Estimated Acreage
7,386 Acres


LAKE BISTINEAU 11-17-09
Giant Salvinia Coverage
Post Flood Event
Severe Mats
Scattered Mats
Scattered Plants
Total Estimated Acreage
4,606 acres

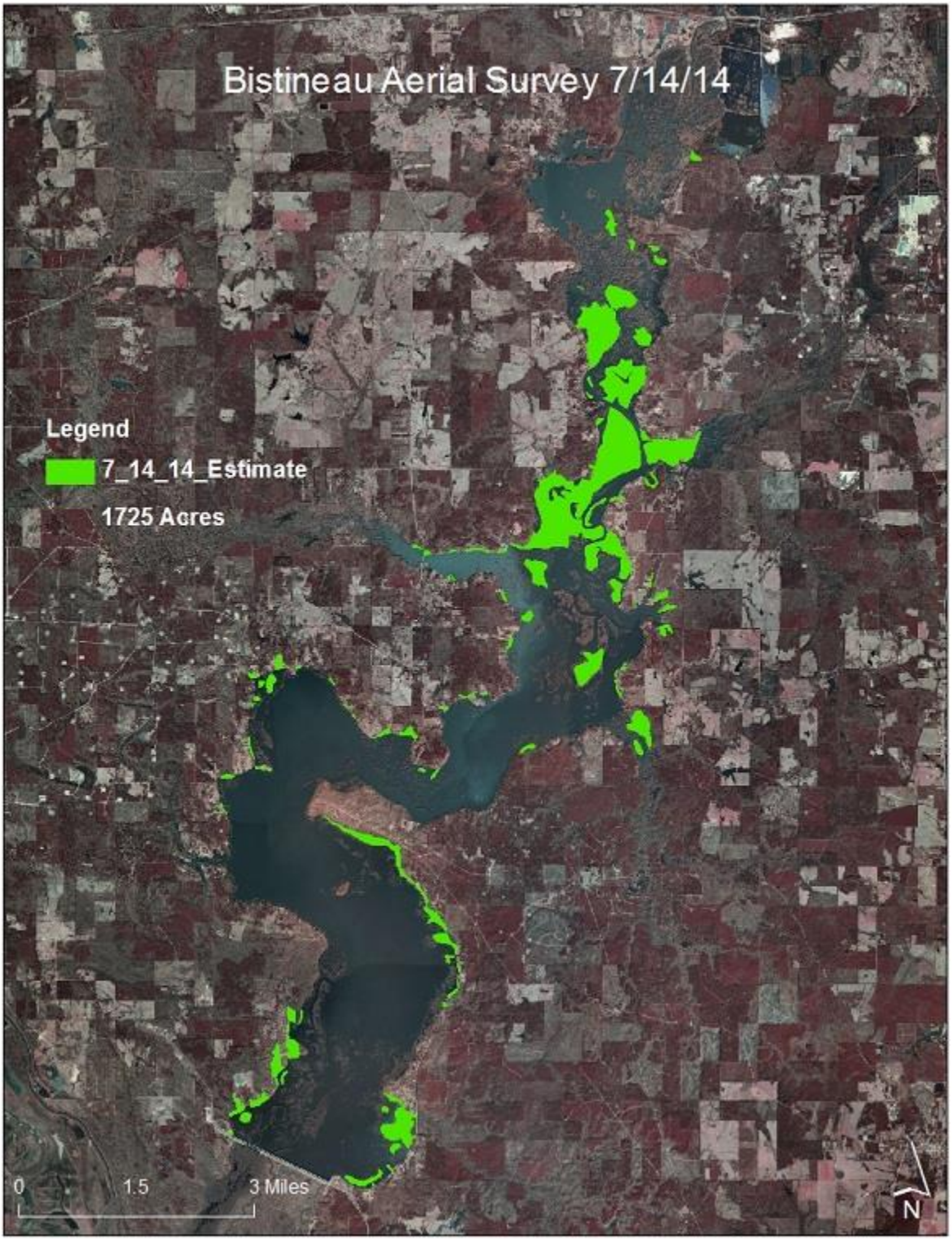
2011 Lake Bistineau Type Map showing alligator weed and giant salvinia coverage in mid-summer.



2012 Lake Bistineau Type Map showing giant salvinia coverage in mid summer.



2014 Lake Bistineau Type Map showing giant salvinia coverage in mid summer.



Lake Bistineau Rehabilitation Plan

INTRODUCTION:

The Lake Bistineau Rehabilitation Plan, herein referred to as the "Plan", is a living document representing an adaptive management approach that will change based on new information, lessons learned and scientific data. The development of this Plan was prompted by the increasing difficulties experienced by landowners and user groups on Lake Bistineau due to the infestation of giant salvinia (*Salvinia molesta*). However, long before the public became aware of how menacing this plant could be to our fisheries resources our fisheries staff was combating its expansion ever since a few plants were discovered near Hog Island in 2006. Surveys in the days following the initial discovery of the plant indicated that primary stage giant salvinia plants were widely scattered over the lower third of Lake Bistineau. In fact, the department has deployed state and contract sprayers, introduced giant salvinia weevils, conducted numerous treatment experiments, deployed booms, conducted drawdowns and provided information to the public in an effort to control this plant. But, by the end of the 2009 growing season, estimates of total surface coverage exceeded seven thousand acres and the department costs for its treatment were climbing towards two million dollars.

Giant salvinia is a contributing factor responsible for fisheries habitat degradation, decreased water quality, decreased and unsafe boating and fishing access and threatens lake aquatic communities. It is an established aquatic invasive species capable of doubling in biomass in 3-5 days and has the potential to double lake surface coverage every 7-10 days during optimum growing conditions. In Lake Bistineau, the rapid expanding coverage of this nuisance aquatic plant species will require a complex comprehensive approach for its control due to the complexities responsible for its successful growth potential.

The term "rehabilitation" is narrowly defined here as returning the lake ecosystem to a state of ecological productivity and usefulness. Any chance to "restore" the lake to the conditions that existed immediately following the placement of the present day dam and spillway has long passed due to natural processes, development, and anthropogenic practices within the watersheds that continue to affect aquatic habitat complexity. It is believed that both the hydrology and sediment regime have been altered and restoration is neither possible nor should it apply in this Plan. Instead, the Plan will focus on rehabilitating ecosystem functions and characteristics that will support desirable aquatic life and enhance user group access.

By all accounts, the efforts to control giant salvinia coverage on Lake Bistineau have been insufficient, to date. However, the fisheries staff has gained a great deal of insight in the last three years as to what might work through a myriad of trial and error measures. For example,

drawdowns, or water fluctuations have proven to be a very effective method to kill aquatic plants, including giant salvinia. On the other hand, herbicide treatments are expensive and have been less effective.

Finally, it would be unrealistic to believe that the actions taken solely by this department in the future will result in any long term solution, or rehabilitation. Rather, long term success will require the formation of tactical alliances among local governments, state agencies as well as private stakeholder individuals and user groups all working together to find ways to implement new strategies.

ISSUES:

The first version of the Plan is the result of research conducted by Mark McElroy and the District I, Inland Fisheries staff. The author acknowledges that the nature and extent of habitat degradation in the ecosystem is not well defined in most cases and therefore some mitigating strategies are less developed at the time of this writing due to missing information and/or data. An example of missing information in this instance includes analyses and an overall description of each watershed. Ever since the lake was formed during the 1930's natural processes, agriculture, silviculture practices, development, road construction, gas exploration, and contaminant introduction within the Lake Bistineau watersheds have all contributed to aquatic habitat degradation.

Aquatic habitats in the lake are in decline, primarily due to silt accumulation in the lake bottom, and nuisance aquatic weed coverage. Poor water quality is the result of introduced nutrients, decreased water depths, poor circulation, cypress tree leaf litter and nuisance aquatic weed coverage. Both boating and fishing access have decreased due to reduced water depths, cypress tree stands, and nuisance aquatic weed coverage.

Lake Bistineau is a 17,200 plus acre-lake with contributing watersheds nearly 925,000 acres in size. The watersheds are located primarily in 3 parishes and all or parts of several counties in Arkansas. There are local (parishes, counties, cities, towns) and two state governments that have jurisdictional authorities in the watersheds. Within the states, there are state agencies with legal authorities such as Department of Environmental Quality that oversee water quality standards. Obviously, achieving a consensus between government entities to achieve mitigating measures outlined in this Plan may be difficult to realize due differences in priorities and capacity.

Giant salvinia is a non-native floating aquatic fern species native to Brazil. The plant can reproduce vegetatively and under ideal growing conditions can double in biomass every 3-5 days. The plants can form mats on the surface which block out the sun's rays from penetrating through the water column thereby inhibiting photosynthesis. Water quality is typically impaired under these mats, especially in areas with restricted water movement. There are very few aquatic herbicides approved (EPA label) for use on giant salvinia, and even fewer demonstrated sufficient efficacy for controlling this plant. Herbicide treatments are expensive.

The dam and water control structure were inadequately designed to properly manage water fluctuations on Lake Bistineau. The control structure should have been constructed at the Dorcheat Creek channel to allow for greater water fluctuation capacity. The capability to conduct drawdowns greater than 7 feet is considered desirable to adequately rehabilitate the lake bottom, fish assemblages, and control nuisance aquatic weeds.

Cypress tree stands in Lake Bistineau are extensive. Annual fall leaf litter is cumulative on the lake bottom and contributes to reduced water quality and suitable fish spawning habitat. Cypress trees pose a potential boating hazard and reduce boating access in many areas of the lake. Cypress trees also provide frost protection to giant salvinia plants and restrict its movement. Lastly, cypress tree stands reduce water movement and allows for silt to fall out and accumulate on the lake bottom, thereby promoting the development of new bottom contours. It is believed that this contouring effect is responsible for the further development of lagoon areas that tend to not dewater during drawdowns. These lagoons or moist soil areas act as nursery areas for giant salvinia and are almost impossible to reach by spray boats.

Plant growth requires that nutrients be available for their uptake. The primary nutrient sources in Lake Bistineau are directly related to the runoff in the watersheds. There are suspicions, but little data to support that improperly treated waste water continually adds nutrients into the lake and contributes to nuisance plant growth.

GOAL:

Goal: To identify objectives and comprehensive rehabilitation strategies that address aquatic habitat degradation occurring in Lake Bistineau and to improve both fishing and boating access.

Living aquatic organisms and their habitats interact dynamically and this ecosystem is continually affected by natural process and human activities in the watersheds such as oil and gas exploration, development, forestry and agricultural practices, and inadequate waste water treatment. Most of these activities have generally contributed, directly or indirectly, to decreased fisheries habitat, decreased water quality, decreased boating and fishing access and improved habitat for nuisance aquatic weed growth. The goal of this plan is to identify comprehensive rehabilitation strategies on Lake Bistineau to conserve and restore fisheries habitat while increasing both fishing and boating access.

OBJECTIVES:

Objective 1. Reduce the growth and therefore coverage of aquatic nuisance species

Objective 2. Improve physical aquatic habitat

Objective 3. Improve fishing/boating access

Objective 4. Improve fisheries

Objective 5. Acquire additional data and information

LIMITATIONS OF THE PLAN:

Major deficiencies in this Plan can be traced to the lack of data and information required to answer some very important questions. There is no up-to-date contour map of the lake bottom. Lake Bistineau has been silting in since the dam was constructed and the rate of siltation has increased in recent years due to anthropogenic practices such as silvicultural practices conducted in the landscape. Efforts to describe dewatered areas during the drawdown were not successful, to date, due to rain events during fall and winter. Also, there is insufficient data to describe watershed hydrology and water quality. And, while we can generally characterize land practices within the watersheds, there are no analyses of these practices. Consequently, there is an inherent risk of making incorrect assumptions or management recommendations without the analyses afforded by modeling both the sediment transport and hydrology.

The success of this plan will require the cooperation of other state and local entities, especially those with specific jurisdictional authority over activities in the watersheds. To achieve the goal, both plausible and realistic actions were investigated. Many of the potentially beneficial actions identified are controlled by another agency that may not be in a position to assist the department in our efforts.

Most of the strategies addressed in this Plan require either significant one time funding or reoccurring funding. The inability to acquire sufficient funding to implement the strategies in this Plan may result in either less than desirable results or complete failure. This Plan makes no attempt to identify specific funding.

REHABILITATION STRATEGIES:

1. To modify the existing water control structure and dam to create the ability to skim plants from the surface, increase drawdown capability to accommodate drawdowns in excess of seven (7) feet and increase ease to fluctuate water levels. The Department of Transportation and Development (DOTD) has jurisdictional authority for managing the water control structure. Both LDWF and DOTD have collaborated on developing improvements to the water control capabilities. DOTD has produced a set

of plans to modify the existing spillway with skimming capacity. The cost estimate for this modification is $1.5 million.

2. To modify the lake bed contour to facilitate drainage of shallow areas during

   drawdowns, increase fish habitat, increase boating and fishing safety and access. LDWF, State Parks, and National Guard officials have collaborated in an effort determine the feasibility of utilizing National Guard capacity for this purpose. In addition, LDWF is contemplating the use of a contractor to map the lake bottom using aerial photography. LDWF has met with the U.S. Army Corps of Engineers to understand permit requirements to perform mitigation measures.

3. To remove a sufficient number of cypress trees inside the lake to decelerate contour development, increase water flow rates, decrease fall leaf litter, increase boating and fishing access and safety, and decrease floating plant restriction to movement. LDWF and National Guard officials have discussed this action. In addition, LDWF has investigated the idea of using private companies for tree removal.

4. To construct boating access facilities that allow for boat launching and retrieval during drawdown events. LDWF has met with all three parish government officials to inform them about the Wallop-Breaux Boating Access program and encourage their participation. LDWF is currently collaborating with Webster Parish in the formation of a quality application to construct a new deep water boating access facility.

5. To decrease nutrient influx and increase waste water treatment compliance. LDWF and Department of Environmental Quality (DEQ) officials are collaborating on how best to acquire appropriate data to characterize the water quality in the lake. In addition, LDWF informed both DEQ and Department of Health and Hospitals (DHH) officials about suspected non-compliance waste water treatment within the watersheds.

6. To protect, expand and link healthy, high quality aquatic habitats. Once the lake is down, fisheries staff will try to identify areas mentioned in Strategy 2 above to incorporate fish habitat restoration.

7. To develop partnerships in order to increase plan implementation capacity. LDWF staff have conducted and attended numerous meetings with both public and private groups. Examples of actions identified for individuals or citizen groups include: stationed lake monitors that will relay information to LDWF officials; dead tree removal, aquatic plant control at boat ramps, donation of time and equipment, weevil introduction……

8. To develop a cost effective nuisance aquatic plant control strategy. The primary method to cost effectively control giant salvinia on Lake Bistineau is to manipulate water levels in the lake utilizing appropriate modifications to the present control structure and spillway. Again, LDWF and DOTD have investigated these modifications measures and DOTD has prepared a set of plans and cost estimate for renovations at the existing spillway. Preliminary planning to develop a water control structure at the creek channel should be initiated. LDWF has discussed with State Parks the feasibility of constructing a weevil hatchery at the park. Annual weevil stockings are recommended. Appropriate aquatic herbicide applications, by boat, backpack, and aerial applicators are planned. Once the lake is 7 ft below pool, LDWF staff will investigate the opportunities to: strategically remove cypress trees in areas that will enhance access, allow for plants to move and increase boating and fishing safety develop a contour map of dewatered areas; utilize specialized herbicides in trapped lagoon areas; mark boat lanes; locate illegal nutrient discharge sites; and deploy booms.

9. To explore one-time and reoccurring funding opportunities.

10. To acquire better, more up-to-date information and analyses about natural processes and anthropogenic practices occurring in the watersheds. A lot of information about the watersheds was learned while preparing this plan, however efforts to model both sediment transport and the hydrology should be investigated.

11. To provide the public access to information about matters affecting Lake Bistineau. Primarily, the department staff attends meetings as well as publishes updates on the LDWF website.

ACTION ITEMS SCHEDULED FOR 2010

- LDWF will continue to initiate water level fluctuations throughout the year whenever it's determined that significant salvinia plant stranding is possible.

- Beginning in March, herbicide spray treatments will commence and continue throughout the growing season. Initial treatments will target large mats in an effort to break them apart to facilitate their movement. After the lake water level is 7 feet below pool stage, LDWF will investigate the plausibility for either Sonar or Galleon treatments in lagoon areas.

- Commence contract spraying early in the growing season. Decisions to use boat or aerial methods will be based on the plants surface coverage, ease of treatment, location in the lake and funding.

- Booms will be deployed in the spring to either ease or inhibit plant movement based on the circumstances and amount of boom material available.

- Once the water level is 7 feet below pool stage, LDWF staff will develop a map of the exposed lake bottom. The map will indicate lagoons, illegal waste discharge, targeted cypress trees, salvinia mats, and boat lane locations.

- LDWF will work with parishes to improve boat lane marking in dewatered areas.

- LDWF will continue to collaborate with the U.S. Army Corps of Engineers and the National Guard in an effort to develop a strategy to rehabilitate the lake bottom, reduce lagoon acreage, increase fisheries habitat and increase boating and fishing safety. Actual lake bottom renovation will be scheduled for 2011.

- LDWF will continue to investigate the plausibility of finding a contractor to remove targeted cypress trees for the purpose of freeing salvinia movement, increasing water flow, decreasing contour development, decreasing leaf litter, enhance spray applications, and/or improve safe boater access.

- LDWF will continue to work closely with DHH and DEQ to obtain a comprehensive water quality evaluation and to seek waste water discharge compliance within the watersheds.

- LDWF will continue to work with State Parks in constructing a weevil hatchery/farm at the park.

- LDWF will continue to work with DOTD to modify the existing spillway structure to allow for skimming capacity to minus 4 feet below pool stage. Additionally, LDWF recommends that DOTD initiate the preliminary design phase to construct a new water control structure at the creek channel for greater water fluctuation capacity.

- LDWF will continue to collaborate with Webster Parish and potentially fund the construction of a deep water boat access site at the Port of Bistineau.

- LDWF will continue to work with State Lands to determine property boundaries, state's rights, and obtaining executed easements.

- LDWF will work with individuals desiring to assist with implementing the Plan. Individuals can help by trimming low hanging cypress branches, removing downed timber, treating salvinia at boat ramp sites, serving as monitors for the purpose of reporting information to the LDWF staff and volunteering the use of equipment.

- LDWF will be prepared to attend meetings and make presentations to educate and receive comments. Conduct meetings with legislators, state and federal agency representatives, parish government officials, user groups, property owners and civic organizations.

- LDWF will constantly monitor giant salvinia growth while implementing the strategies and provide updates on the department's website.

MEASURING SUCCESS:

The purpose of this Plan is outlined in the Objectives and Goal. The Strategies identify the methods to achieve both the Objectives and therefore the Goal. Implementation of the Strategies will be monitored and assessed by LDWF staff. Most analyses can be quantified, or at least described. Any measurable or descriptive assessment that conclusively contributes to the achievement of one or more Objective shall be considered a success. For example, water fluctuations during the winter months reduced giant salvinia coverage by 40% from the previous June. Or, compliance with point source waste water discharge was increased from 60% to 90%.

SUMMARY:

The challenge to control giant salvinia on Lake Bistineau, or any lake for that matter will require a comprehensive and innovative approach that fully considers the contributing factors for its introduction and growth. The consequences realized as a result of the growth of this particular plant species will continue to negatively impact fisheries, fisheries habitat as well as decrease fishing and boating access unless all measures are brought to bear for its control.

To date, water fluctuation should be the primary technique utilized to control giant salvinia on Lake Bistineau. Dewatering sufficiently to strand and dry the plants will kill giant salvinia. The method requires the periodic opening and closing the gates at the water control structure which can be accomplished at little cost. In addition, Lake Bistineau and the water control structure are ideally situated to take full advantage of floating plants like giant salvinia. Lake Bistineau is primarily situated north-south with the control structure at its farthest southern point. Allowing the plants to move south with prevailing winds from the north during several months out of the year would allow for their accumulation at the dam. Modifications to the existing control structure would allow for the plants to passively flow (skim) out of the lake and into Loggy Bayou WMA where the vast majority of plants are stranded.

The other strategies identified in the plan, including herbicide use dove- tailed with the water fluctuation concept and any effort to de-emphasize their importance should be avoided. However, spraying herbicides to control giant salvinia on Lake Bistineau is problematic. Their required method of application, expense to purchase and apply and limited efficacy are issues that have to be considered prior to their usage if they are going to considered as a tool to combat giant salvinia on Lake Bistineau or any other waterbody.

Finally, the method of harvesting giant salvinia was considered and determined to be, ineffective, inefficient and too costly to pursue. The equipment required to harvest this plant on a large scale is expensive to purchase and maintain. There are numerous issues that have to be considered when removing the plants from the lake, transporting, and then their eventual disposal. Further, it is generally understood that removing some plants (harvesting) from an area actually invigorates the growth potential for those plants remaining.